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TRANSACTIONS

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VERMONT

MEDICAL SOCIETY,

FOR THE YEAR 1885.

PUBLISHED BY THE SOCIETY.

Annual Meeting the first Thursday and Friday in October after the second Wednesday, and the Semi-Annual Meeting shall be held on the last Thursday and Friday in June, at such place as directed at the preceding Annual Meeting.

BOSTON MEDICAL LIBRARY ASS'N.
MAY 20 1886

MONTPELIER, VT.,
ARGUS AND PATRIOT STEAM PRINTING HOUSE,
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TRANSACTIONS

OF THE

VERMONT

MEDICAL SOCIETY,

FOR THE YEAR 1885.

PUBLISHED BY THE SOCIETY.

ANNUAL MEETINGS AT MONTPELIER, THE FIRST THURSDAY AND FRIDAY IN OCTOBER, AFTER THE SECOND WEDNESDAY; AND THE SEMI-ANNUAL MEETINGS THE LAST THURSDAY AND FRIDAY IN JUNE, AT SUCH PLACE AS APPOINTED AT THE PRECEDING ANNUAL MEETING.

MONTPELIER, VT.:
Argus and Patriot Steam Job Printing House.
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CATALOGUED.
E. H. B.
7/15/86.

NOTE.—Each article published herein stands upon its own merits, as the expression of its Author's opinions, for which the Society does not hold itself responsible.

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PROCEEDINGS

OF THE

Vermont State Medical Society,

FOR 1885.

SEMI-ANNUAL MEETING.

The semi-annual meeting was held at Bellows Falls, on the 25th and 26th of June. The President, Dr. Joseph Draper, Superintendent of the Asylum for the Insane at Brattleboro, called the meeting to order. Records of the annual meeting read by the Secretary, Dr. J. S. Richmond.

During the meeting the following named physicians were admitted to membership:

Drs. I. M. BISHOP, of Grafton, - - - Dartmouth, 1881.
C. W. LOCKE, of Grafton, - - U. V. M., 1882.
E. L. WALKER, of Hinesburgh, - - U. V. M., 1883.
A. B. BISBEE, of South Royalton, Coll. Phys. and Surg., N, Y., 1882.
GEORGE S. FOSTER, Putney, Vt., - U. V. M., 1874.

The following communication was received from the Woman's Christian Temperance Union, which, on motion of Secretary, was unanimously adopted:

TO THE MEDICAL ASSOCIATION OF VERMONT:

Convened at Bellows Falls, June 25th and 26th.

Realizing your opportunities for doing good in the temperance cause, the Woman's Christian Temperance Union of this State calls your attention to the following resolution, passed by the American Medical Association at its annual meeting, held in St. Paul in June, 1882:

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RESOLUTION.

We, members of the medical profession of the United States, unite in the declaration that we believe alcohol should be classed with other powerful drugs; that when prescribed medically it should be done with conscientious caution, and a sense of great responsibility.

Knowing that no class of our citizens has such extended opportunities for observing the pernicious effects of alcoholic stimulants upon the healthfulness and morality of our people, as the members of your honored profession, and believing that no class has greater influence for good or evil, we would respectfully ask that your association pass a resolution of concurrence with the resolution of the National Medical Association. Respectfully yours,

MRS. E. G. GREENE,
Superintendent of Conference with other bodies,
for the Vermont W. C. T. U.

Dr. W. N. Bryant read a well prepared paper on Gynæcology.

Dr. R. H. Sabin, of West Troy, N. Y., presented credentials from the New York State Medical Association, was presented to the Society by President Draper, and invited to unite with us in the work on hand. Dr. Sabin's response and his hearty participation in the meeting gained him a right earnest welcome.

Dr. Crain called the attention of the Society to a battery, invented by John Arnold Barrett, of New York City. The instrument was explained by Rush C. Barrett, Esq., and was considered the best battery for physicians we have ever seen.

Gynæcology was discussed by Drs. Goodwillie, Crain, Phelps, Wood and Richmond.

At 4 : 30 P. M. adjourned until 8 P. M.

At 8 P. M., called to order by President Draper. Vice-President C. S. Caverly delivered the semi-annual address, which was eminently a popular and practical paper on "The Causes of our Common Infectious Diseases, with Reference to their Prevention."

Prof. H. D. Holton then gave a very able address on the subject of "Hygiene."

The State Society of the Woman's Christian Temperance Union visited our hall, by invitation, and listened to the addresses.

Adjourned to 9 A. M. to-morrow.

Dr. Sabin detailed the case of a lady aged 25—thin and spare—poor constitution. When a child she fell to the ground and peeled the skin up on her hands; soon the fingers became contracted, and the skin formed over the fingers, completely enclosing them, and the hands be-

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came mere stubs within the skin. The feet also became clubby. At this time, as the saying is, she was merely skin and bones. She thought she had a foreign body in the rectum, which had been there for years. She was etherized, and the rectum examined. One quart of ether was used. Discovered a very hard substance; broke it up with strong forceps. It weighed 5 ounces. Diagnosis: petrified fæces, which undoubtedly had remained in the rectum 17 years. Dr. Mason, a chemist, said it was carbonate of lime principally; presumed it was hardened fæces, but could not say so certainly.

Dr. N. P. Wood reported a case of hemorrhage of the bowels of a child *two days* old. The mother had a natural labor-child; weighed 9½ pounds, appeared sound and well. Two days after birth, child passed from one-half to one ounce of blood at each movement, and had some twelve operations. Before each passage the child was in pain; appeared bleached out. I gave 10 drop doses of paregoric, and child soon after recovered. Literature shows these cases very rare, and most of them die. They are generally taken in from 30 to 60 hours after birth.

Dr. Sabin in cases of uterine hemorrhage at the climacteric, frequently dilates the os uteri thoroughly, and touches the bleeding surface with fuming nitric acid. Has recently treated three cases with great success. One of his patients was 53 years old. He first used a stream of hot water, while she was flowing. In any of these cases there must be a free opening. Generally one application of the acid will suffice. Has used the acid three times in same case. It is at least successful in stopping the hemorrhage for the time being, and the cure is generally permanent. In regard to pessaries, he said we must use them sometimes, but avoids them if possible. Thinks the round spring or Hodge pessary the best in use.

Dr. Crain thinks that in the great majority of cases pessaries are a positive injury. Recommends a pledget of borated cotton, if anything is to be used.

June 26th, 9 A. M., President Draper called the meeting to order.

Dr. E. S. Munger read a well prepared, practical article on "Antipyrin and Kairin as Antipyretics," and detailed cases in which he had used the medicine with great satisfaction.

Dr. E. S. Albee read a paper on "Purpura Hæmorrhagica," which elicited considerable discussion.

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The executive committee reported business for the annual meeting, as follows:

ADVANCES IN MEDICAL SCIENCE.

Anatomy, Physiology and Histology, -	DR. O. W. SHERWIN.
Materia Medica and Therapeutics, -	DR. H. D. HOLTON.
Practice of Medicine, - - -	DR. A. P. GRINNELL.
Surgery, - - - - -	DR. D. G. KEMP.
Obstetrics, - - - -	DR. JAMES CONLAND.
Annual Address, - -	PRESIDENT DR. JOSEPH DRAPER.

ESSAYS.

Diphtheria, - - - -	DR. C. N. HUNT.
Ethics, - - - - -	DR. HENRY JANES.

OBITUARY NOTICES.

DR. E. N. S. MORGAN, - -	by DR. F. W. GOODALL.
DR. H. H. WHITCOMB, - -	DR. A. L. McMILLAN.
DR. HORACE FALES, - -	DR. HENRY JANES.

A general discussion followed. Interesting cases in practice were detailed by Drs. Sabin, N. P. Wood, E. R. Campbell, S. Putnam and E. S. Munger.

Medical ethics, introduced by Dr. H. F. Crain, brought out an earnest and lively discussion. The focus of this discussion seemed to be that members of this Society should strictly obey the code of ethics.

On motion, adjourned.

J. S. RICHMOND, M. D., Secretary.

ANNUAL MEETING.

The seventy-second annual meeting was held in the parlors of the Pavilion Hotel, at Montpelier, on the 15th and 16th of October.

The President, Dr. Joseph Draper, called the meeting to order at 10 A.M.

Prayer was offered by Rev. Howard F. Hill, of Montpelier. Dr. J. S. Richmond, Secretary, read the records of the last meeting.

Dr. S. Putnam, Treasurer, presented his report, which was adopted. The treasurer has received $200.76, and paid out $163.00, leaving in the treasury $37.76.

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On motion of Dr. O. W. Sherwin, the President was directed to appoint a committee of five on nominations. Drs. O. W. Sherwin, S. Putnam, W. L. Hoisington, D. F. Rugg and E. F. Upham were appointed, and directed to report at the morning session.

NEW MEMBERS ADMITTED.

DR. C. G. R. JENNINGS, Bennington, Vt., U. V. M., also at Coll. Phys. and Surgs., N. Y.

DR. ANDERSON D. DYER, JR., Bellevue Med. Coll., N. Y., 1883.

Dr. R. H. Sabin, of West Troy, N. Y., presented credentials from New York State Medical Association, as a delegate to this Society, was introduced to the Society by the President, and made an appropriate speech in response.

REPORT OF DELEGATES TO THE UNIVERSITY OF VERMONT.

The undersigned, delegates appointed by the Vermont State Medical Society, at its annual meeting in 1884, attended the examination of candidates for the degree of M. D., as conducted by the Medical Faculty of the University of Vermont, on the 23d, 24th and 25th of June.

There were 93 candidates. Of these 78 passed their examinations satisfactorily to the Faculty and to your delegates, and with much credit to themselves. The replies elicited showed that the instruction had been in the highest sense complete, and their clinical advantages had been both extensive and profitable. The examinations were thorough, practical and impartial, in which your delegates were very cordially invited to participate.

Of those graduated there were 11 from Vermont, 86 per cent. of the class coming from other States and countries. In our opinion the Faculty deserve the good will and support of the profession, especially in their untiring endeavors to still raise the standard of every branch of study in the curriculum, as well as the preliminary education required for admission. And with added facilities and improvements, the College certainly merits the success and reputation it has obtained, and the continued support of the profession.

W. L. HOISINGTON, M. D.,
F. T. KIDDER, M. D., } Delegates.

Dr. O. W. Sherwin read a paper on "Advances in Anatomy, Physiology and Histology." Discussion followed.

Dr. Sherwin remarked that a slight surgical operation might interest the ladies somewhat, that pregnancy may exist without rupture of the hymen.

Dr. Sabin had seen such a case.

Dr. Terrill asks if a ruptured hymen is evidence of intercourse. Dr. Sherwin says it generally is, but such evidence is not positive. Dr. Munde states that the hymen may remain in a torn condition (but capable of being reunited) for years, if the woman has no children.

Dr. Sabin read a paper on "Rupture of the Vagina with the first

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Coitus;" also two cases from the *Medical and Surgical Reporter* of June 27th, 1885.

Dr. Sabin presented specimen of hardened fæces, which case was fully reported at the last meeting.

Dr. Charles E. Chandler read a very interesting paper on "Reduction of Dislocations of the Shoulder by the Kocher Method," detailed cases, and explained the method. This subject was fully discussed by Drs. Terrill, O. W. Sherwin, Rugg, Kemp and C. M. Chandler.

Adjourned to 1 : 30 P. M.

Met as per adjournment, at 1 : 30 P. M.

Prof. William T. Smith, of Hanover, presented credentials as a delegate from the New Hampshire Medical Society. Dr. Smith was introduced to the Society by President Draper.

Dr. D. G. Kemp read a paper on "Advances in Surgery," which elicited considerable discussion.

Dr. Sabin said that he had used cocaine in diphtheria and tonsillitis, with great succces. In regard to explorations for the purpose of making a diagnosis, he thought the fashion quite too prevalent; referred to Lawson Tait opening the abdomen to find out the exact trouble; doubts the utility of such explorations; believes in Dr. Alonzo Clark's suggestion in 1853, "Give opium enough to stop the pain, and let the patient rest."

Dr. C. A. Sperry was called on to report a case of skin grafting. The lower third of the tibia was diseased to such an extent that Drs. Richmond and Sherwin thought the safest and best treatment was to amputate the leg. Dr. Sperry begged off from this extreme measure. After an operation to remove diseased bone and flesh, the wound presented a bony surface, elliptical in shape and about two by three inches. Dr. Sperry kept the patient on his back for two months, dressing the ulcerated surface with iodoform, vaseline and borated cotton bandaged on. It healed over and covered the bone, but as soon as patient was allowed to exercise the new formed tissue broke up, and ulceration became active. Dr. Sperry then resorted to grafting in pieces of frog skin from the belly and thighs. The pieces were at first mere specks; finally he used some the size of a finger nail. The frog skin was absorbed, or disappeared, in from four to six days, but it formed points from which healthy granulations radiated, and after three or four weeks the wound was completely healed, and the patient has been working on a farm ever since.

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Prof. Grinnell, of the Medical Department of the University of Vermont, spoke upon the subject of small-pox, and vaccination as a preventive. The ignorance of the people on these subjects should be enlightened. They fear small-pox and they fear vaccination, the latter lest some other disease should be communicated to them thereby. Of this there is no danger when the vaccine virus has been properly taken and the vaccination properly performed. The bovine virus is better and safer than the humanized virus, because the latter may possibly have in it some commingling of the blood of the person from whom it is taken. But there need be no fear of either, in the hands of those who have a proper knowledge. True vaccination shows itself in three to five days from the insertion of the virus, and goes on to its completion about the eighth or ninth day. It is a prevention of small-pox. Occasionally there may be an exception, but this is the rule. Re-vaccination may be well as a safeguard, but the virus having once wrought its true effect in the system, the person is as safe from small-pox as if he had the marks of it on his face. The doctor's remarks were followed by a long discussion, in which the conclusions he presented were unanimously concurred in by the Society.

Drs. E. F. Upham and S. S. Clark, delegates to the New York State Medical Association, report by Dr. Upham:

President and Members of Vermont Medical Society:

As one of your delegates to the New York State Medical Association, at its first annual meeting, held at Murray Hill Hotel, New York City, November 18, 19, 20 and 21, 1884, allow me to report that, in company with Dr. S. S. Clark of St. Albans, I attended the meeting. We were cordially received, courteously treated and invited to participate in the discussions and scientific work of the meeting. Though this was the first annual meeting, between four and five hundred were in attendance, representing all sections of the State, and it has never been my fortune to attend a medical meeting where so general interest and so much zeal was manifested to make the gathering a means of scientific and practical instruction and improvement. The programme was full, embracing all departments relating to medical practice, and to complete the work evening sessions were held each day, except the last, which was devoted to sociability. At a banquet or dinner where sociability and humor were generally participated in by post prandial toasts and responses by the members and invited guests, several of New York's noted men from the ranks of law and theology were present, and added to the enjoyment by short responsive speeches. In closing this brief and imperfect report, allow me to say to the delegates from this Society the present year that they will be amply remunerated for their loss of time and expense in attending the meeting, by the instruction gained, and in the enjoyment growing out of the association with the eminent medical men who will be present and participate in the work of the Association. My excuse for giving you so meagre a report of the programme and special work of the meeting, is the fact that I supposed my colleague, Dr. Clark, was to make the report, and I have not my notes taken at the time with me, and as so long a time has passed, am unable from memory to give full details.

Respectfully submitted,

E. F. UPHAM, Delegate.

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Prof. Smith, in referring to a quotation by Dr. O. W. Sherwin from Dr. Roberts, "that any portion of the brain can be examined," thinks that the idea, to say the least, is very radical; recollects but one attempt to remove a tumor from the brain. Aside from opening cerebral abscesses, he does not know of any safe way to interfere. It may hereafter be more common than now. If there is depression even without disturbance of brain function, *let it alone*. Tait and others are too radical, in my opinion. Tait always operates for fibroids, but even he loses 50 per cent. of his cases. Unless there are urgent and immediate indications for operation, let them alone. True, these bold ones show possibilities—they are pioneers, and as such we owe much to their efforts.

Dr. Crain detailed a case of Cystic Fibroid. Patient had consulted Drs. Emmett, Kimball, and others, without benefit. Dr. Crain aspirated, and got 16 pounds of thick, yellow, coagulated fluid. The tumor filled again in three months; has resorted to electrolysis once in two weeks, with success thus far; will report result at next meeting.

Dr. W. T. Smith inquired if any member had seen a case of *physiological* albumenuria. It is understood as an abnormal condition. Senator holds that about 10 per cent. of adults have albumen in the urine.

Dr. Cutting detailed the case of Dr. Hubbard, in which there was constantly albumen in the urine. Examined his urine every four to six weeks, and never found less than 10 per cent. of albumen; thought he would die, but he lived 15 years.

Dr. SABIN: If you have albumen in the urine, is it not positive evidence that there is some trouble with the kidneys?

Dr. Smith says he has a case which presents no appearance of disease except albumen.

DR. FASSETT: Does albumen in the urine mean disease? Do patients with albumenuria live? I think albumenuria not necessarily fatal. The case may go on for months and years before the friends or the patient notice anything unusual. These cases are not, by any means, necessarily fatal. You may even have the early stage of degeneration of the kidneys, without marked signs of disease.

In case of a man 40 years old, who passed large quantities of urine, I found albumen. The case went on for a few months and the man got well. I never told him about the albumen. The fact is, we cannot now determine this question.

I treated a boy eight years old in an advanced stage of albumenuria for three months, without benefit. This boy has for years spontane-

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ously resisted degeneration of the kidneys. I believe that some cases do recover. Feeding may temporarily produce albumen. We are taught that albumen alone is not diagnostic; that we must find casts to make the diagnosis sure. In Dr. Flint's case only albumen was found, and the doctor was in doubt about Bright's disease. Albumen is always a source of anxiety and significance to me. and still I do believe that some cases get well.

Dr. C. C. Perry thinks that heat and nitric acid are not entirely reliable to discover albumen; that alcohol must be used to dissolve resinous substances.

Dr. Sabin uses heat and nitric acid, or nitric acid and heat; spoke of cases of albumenuria following scarlatina, as frequent and not fatal.

Dr. Sabin detailed a case of rigid os uteri, into which one-third grain of morphine and one-sixtieth grain of atropia were injected. Soon the os became softened, and in one hour the child was born. It was perfectly narcotized.

Dr. Fassett frequently uses morphine in tedious labors; never had any trouble from it.

Dr. Smith has never had any trouble from the use of morphine in these cases, and thinks it perfectly safe to vaccinate a pregnant woman.

Adjourned to 7 P. M.

At 7 P. M. Dr. L. C. Butler called the meeting to order, and President Draper delivered the annual address. Unanimous vote of thanks tendered the President for his address.

Adjourned to 9 A. M. to-morrow.

OCTOBER 16TH, 9 A. M.

President Draper called to order.

Dr. H. F. Crain reported, in regard to the draft of a bill received from the United States Medical Association, for the purpose of establishing a State Board of Medical Examiners and Licensers.

That "If such a Board could be established in all the States and Territories it would be of great benefit to the profession and the people, but under the present condition of things, and especially under our present Vermont laws, it is impracticable, and therefore reports adversely to adopting the act."

The nominating committee reported as follows:

For President, D. G. KEMP, - - - - - - - - - Montpelier.
Vice-President, E. R. CAMPBELL, - - - - - Bellows Falls.

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Secretary, J. S. RICHMOND, - - - - - - - - Woodstock.
Treasurer, S. PUTNAM, - - - - - - - - - - Montpelier.
Auditor, C. E. CHANDLER, - - - - - - - - - Montpelier.

EXECUTIVE COMMITTEE.—Drs. J. S. Richmond, A. B. Bisbee, C. A. Sperry.

PRINTING COMMITTEE.—Drs. S. Putnam, D. G. Kemp, C. M. Chandler.

LICENSE CENSORS.—Drs. D. F. Rugg, W. L. Hoisington, D. C. Hawley.

COUNCILORS.

Addison County, - - - - - - - - - - - M. H. EDDY.
Bennnington, - - - - - - - - - - - LYMAN ROGERS.
Caledonia, - - - - - - - - - - - - - S. T. BROOKS.
Chittenden, - - - - - - - - - - - - F. R. STODDARD.
Essex, - - - - - - - - - - - - - - R. T. JOHNSON.
Franklin, - - - - - - - - - - - - - O. F. FASSETT.
Grand Isle, - - - - - - - - - - - - - F. A. LADUE.
Lamoille, - - - - - - - - - - - - - JOEL ALLEN.
Orange, - - - - - - - - - - - - - E. F. UPHAM.
Orleans, - - - - - - - - - - - L. J. LETOURNEAU.
Rutland, - - - - - - - - - - - - - A. D. DYER, JR.
Washington, - - - - - - - - - - - - D. G. KEMP.
Windham, - - - - - - - - - - - - - N. P. WOOD.
Windsor, - - - - - - - - - - - - J. S. RICHMOND.

DELEGATES.

To American Medical Association.—L. C. Butler, S. J. Allen, William M. Huntington, H. F. Crain, J. Draper.
Maine.—S. Putnam, J. S. Richmond.
New Hampshire.—O. W. Daley, O. W. Sherwin.
Massachusetts.—E. F. Upham, W. L. Hoisington.
Rhode Island.—E. S. Albee.
Connecticut.—James Conland, D. P. Webster.
New York State Medical Association.—O. F. Fassett, M. R. Crain.
Northern New York Medical Association.—M. H. Eddy, L. M Bingham.
Connecticut River Valley Medical Society.—S. S. Clark, A. C. Sherwin.
Dartmouth Medical College.—O W. Sherwin, J. S. Richmond,
U. V. M.—L. M. Greene, C. S. Caverly.
White River Medical Association.—F. Blanchard, C. E. Chandler.
White Mountain Medical Association.—D. F. Rugg.

Semi-annual meeting to be held at Burlington.

O. W. SHERWIN,
S. PUTNAM,
W. L. HOISINGTON,
D. F. RUGG,
E. F. UPHAM,
} Nominating Committee.

On motion, report adopted.

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An obituary notice of Dr. H. H. Whitcomb, prepared by A. L. McMillan, was read by secretary.

Dr. E. F. Upham, delegate to American Medical Association, made the following report:

Mr. President and Members of the Vermont Medical Society:

Being the only delegate to represent this Society at the last meeting of the American Medical Association, held in New Orleans, on the 27th, 28th, 29th and 30th of April last, and continuing through May 1st, it devolves on me to briefly report, which I do as follows: The number of delegates present was between seven and eight hundred, and all sections of the country were represented; but naturally, from the place of meeting, the attendance from the South and South-west was largely in excess of the representatives from the more distant States and Territories of the Union. The meeting was one of interest, and the sections, as a rule, carried out the programme advertised in the announcement of the meeting, and a very general interest was manifested from all sections in the advancement of medical science and practice, as well as a strong desire and determination to leave nothing undone to make the Society truly national in character, as well as the representative of the advanced thought in scientific medical attainments. I will not tax your patience with an attempt to report the doings and sayings of the different sections, as doubtless most, if not all, have had abler and more correct reports than it is possible for me to give, as they have been fully reported in the *Journal of the American Medical Association*, published at Chicago. However, I cannot forbear brief mention of the interest manifested in the section on climatology and collective scientific investigation, as related to understanding the development of diseases in different localities. The section on Obstetrics and Gynecology also had an interesting and instructive discussion on the question: How long after the attendance on patients ill of Zymotic and contagious diseases, is it safe and the practitioner justified in attending a case of confinement; and what is the best means of disinfection while attending or after attendance on contagious diseases? By some, eight days was considered to be the shortest safe time, while others, apparently with as wide a field for observation, considered it safe to accouch a woman while in attendance upon erysipelas, puerperal fever, and other contagious diseases, with the observation of absolute personal cleanliness, with especial care that hands should be absolutely perfectly clean. And this seemed to be the opinion of the majority present who took part in the discussion. Dr. Sutton, of Pittsburg, Pa., made extended remarks, or rather presented a paper on Laparotomy, believing it a justifiable operation in many cases where tumors or ovarian disease could not be detected, and reported cases that had been attended with severe abdominal pain and debility where little or no abdominal enlargement could be detected. Where an abdominal section had been made, the hand passed in, and, although no firm intestinal or peritoneal adhesions could be detected, and neither uterine nor ovarian disease detected, his view was that slight adhesions were the cause of the suffering, and that the introduction of the hand and the necessary motion caused to the intestines by the examination, destroyed the adhesions and gave the relief. Dr. Daniels, of Austin, Texas, confirmed his views, and reported several cases that had been greatly relieved or cured by him by opening the abdomen, and simply passing his hand between the intestines and peritoneum. In the general sessions, the most exciting discussion of the meeting occurred on the motion to accept the report of a committee of eight appointed at the meeting in Washington, D. C., in 1884, to invite the International Medical Congress to meet in Washington in September, 1887; and, should the invitation be accepted, to make arrangements for its meeting. The invitation was given and accepted, and the committee then proceeded to make arrangements for its meeting, by adopting rules for its government and making nominations for the officers of the Congress; also dividing the work into proper sections, and appointing the officers for the Americans making up these sections. It was claimed that in filling the offices of sections the committee had ignored a large portion of the country, and largely made their selections from three cities,

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viz.: New York, Philadelphia and Boston, to the prejudice of other cities and sections of the country equally entitled to representation. It was also claimed that the committee had filled some of the most important offices of the American portion of the Congress with men who were voluntarily in open antagonism with the profession of the United States, as represented by the American Medical Association. After an exciting but still gentlemanly discussion, it was decided to add to this committee appointed in 1884 one from each State and Territory of the United States, and one from each the army, navy, marine hospital service and District of Columbia, with power to alter, revise or amend the report of the original committee. And this committee, as enlarged, proceeded to organize by electing as Chairman or President, R. Beverly Cole, of San Francisco, Cal., and John V. Shoemaker, of Philadelphia, Secretary. This committee met in Chicago, June 24, and again in New York September 3, and have made their report, which is published in part, and will be completed when those elected to fill the council in the different sections are communicated with and signify their acceptance. Being the only one to represent Vermont, it was my fortune, or misfortune, per necessity, to act on this enlarged committee or allow Vermont to be unrepresented; and, knowing the disposition of this Society to forgive errors and accept well designed endeavors, chose the former, and end eavored to act as your representative in accordance with the expressed action of the Society and my honest convictions for the advancement of American medical science.

Most Respectfully Submitted,

E. F. UPHAM, Delegate.

He also remarked that the International Congress is not fully understood by the profession. Many think it an independent institution, and that it goes round at its pleasure. In 1884, at the meeting of the American Medical Association, it was thought advisable to invite the International Congress to hold its next meeting at Washington, and a committee of eight was appointed by the American Medical Association to attend the International Congress at Copenhagen, and extend the invitation to that body. This committee of eight received its powers from the American Medical Association, and accepted the trust. In their report at New Orleans, in May, 1885, the members of the Association were dissatisfied. They thought that the committee of eight had given all the places to a few men, and that others in important positions were ignored.

The Association added new members to that committee of eight, and revised their actions. The committee of eight then acted on the theory that there were two committees, while the Association claimed that there was only one, and the latter opinion was confirmed by counsel from Washington on parliamentary usages.

The enlarged committee held a meeting in Chicago on the 24th of last June. Before this committee met, doctors in New York and Philadelphia washed their hands of anything to do with the enlarged committee. Now, how could you make a man work at the 24th of June meeting when he had sent in his resignation before that time? The

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New York men injected the code question, and are responsible for the trouble which now exists.

Dr. Henry Janes read a paper on "Ethics," which brought out a lively discussion. Dr. Richmond claimed that so long as we subscribe to a code, we should live up to it; that it has become notorious that some of the most prominent physicians in the State squarely and knowingly break the code they have deliberately subscribed to. often to the great injustice, injury and pecuniary loss of the younger practitioners. Let us live up to our code, or abolish it.

Dr. Crain thinks Homœopathists should be made to pull down their signs before we counsel with them; that we have no business to deal with them in any way.

Dr. Upham is very positive in his ideas on this question. It is easy enough to ridicule and make either side appear ridiculous on this floor. Dr. Janes wishes us to use the golden rule, and it is true that the nearer we do this, the higher we shall stand. In this matter we should ignore the individual, and consider that we are representatives of the medical profession, and that we should conscientiously contribute to its worth and advancement. We should not contribute more effort to form rules for ourselves than solid professional work for the benefit of humanity. Now is it advisable to have any code? That science knows no code is true, but we are associated together for a common object, and while we are practicing our profession with fidelity and zeal, the bread and butter question comes up sometimes all too prominently for our comfort. We must have the necessaries of life, and in procuring these selfishness and over-reaching and human traits creep in and produce discord in our ranks. Unprofessional usage is common, as we all know. The golden rule is ignored, and we feel that our professional brother needs restraint; therefore *we* are willing to be restrained. I believe that human society needs laws. It always has and always will. I know that there is a tendency to cut loose from all restraint, but I don't believe we are good enough yet to cut loose from all restraint. In emergencies, like obstetrics, surgery, etc., I meet anybody, but when the emergency ceases I arrange my business with reference to these cases. Our Society had better adopt a reasonable code, and then live up to it.

DR. CAMP: Dr. Upham says it is good for us to have law, but what is law good for if not obeyed? Another says Homœopathists have an exclusive dogma, and are therefore dishonest. Now my opinion is that those who suffer most from Homœopathists are the ones who scold most.

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Dr. Somers believes in liberty. Don't believe dishonesty confined to Homœopathy more than to Regulars. Many Homœopathic remedies are really valuable, and you can buy them much cheaper of Homœopathic druggists. We are continually attacking Hahnemann, but not the Homœopathy of to-day. We repudiated spatting, but the spatters got our patients, and cured them, too, and we learned something. So of Homœopathy. If we would spend half the time in studying it that we do in ridiculing and scolding about it, I believe we should receive real benefit by the change. Take the simple matter of their dispensing their own medicines, while we write prescriptions, and tax the pocket-books of our patrons. In this they beat us. They beat us again in the agreeableness of their remedies.

Dr. Jackson is glad this discussion has been brought out, and is further pleased that Dr. Janes don't believe in the infallibility of the Pope. It has been well said here that dishonesty is not confined to Homœopathy. Did you ever know of bread pills, carefully made, perhaps the best thing in the world for the patient, but is it honest practice? I wish to commend some Homœopathic remedies, such as the mother tincture of belladonna and aconite, the most reliable preparations to be found.

Is it necessary to have a code at all? Are our English or German brethren confined to a code? They get along well. I have never refused to consult with a gentleman. I have refused to consult with some Regulars, code men, too. If I find a man who is a man, a gentleman, I meet him. There is a law of humanity that we must obey, in spite of all codes.

Dr. Crain says that nine-tenths of our patients would get well without any treatment. We give sweetened water, bread pills, anything and everything which science and the occasion may dictate, but we don't put up our sign and advertise that *we* give only bread pills.

DR. JACKSON: The clergyman said of Ingersoll, when he declared there was no good in religion, that for that very reason Ingersoll was not competent counsel.

DR. SOMERS: There has been more change in Homœopathy of late than in the Regular School. The tendency of both is to fuse, and in my opinion they will within a few years. If we counsel with them, we can manage them. Now our opposition sustains them, and is the main thing that makes them flourish.

Dr. C. M. Chandler said for the first 5 years of his practice he saw nothing of Homœopathists. For the last 25 years he cannot get rid of

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them. Has amputated a leg, and left the case with Homœopathists. Prof. Darling said at Burlington, "Let those who do not live in glass houses throw stones." But it takes the bottom all out of a man to meet them. We signed the constitution of this Society. Is it valid? I have broken it. So has Dr. Janes, Dr. Holton, and many others. I don't want to do so, but circumstances have made me, and I presume others are in the same boat. We signed this code as we sign a note of hand. I fear we shall, most of us, have a hole in our glass. Now shall we meet irregular practitioners? They are, generally speaking, not educated. They are anything to get money. Shall we join in that procession?

DR. UPHAM: The question for us to decide is, Are we as a profession, and are our patrons, to be benefited by our association with irregulars of any path or ism? Do we need any restraint or code? We must determine these questions. I believe we need rules, and need to have them enforced. I grieve to say that the tendency at present is to a lack of interest in our Society and its works. If our rules are burdensome, let us alter them; if they are right, stick to them.

President Kemp said we should settle this matter now and here. No such feeling as now exists should continue any longer. If the older physicians are allowed to meet irregulars, the younger should be permitted to do the same.

DR. JANES:

Resolved, That it is the sense of this meeting that Article IV of our Code of Ethics, defining the duties of physicians in regard to consultations, is not to be interpreted as prohibiting consultations with learned physicians in good standing who are graduates of medical colleges in which Anatomy, Physiology, Pathology and Organic Chemistry are thoroughly taught.

After discussion, on motion of Dr. Crain, ordered to lie over for one year.

DR. UPHAM:

Resolved, That all rules relating to ethics, adopted by this Society in its constitution and by-laws be repealed or stricken out.

Dr. Janes objected to the resolution; thought our code all right, if rightly construed.

Dr. Upham said he offered the resolution to bring matters to a focus, and that the Society might settle on something.

On motion, the resolution was tabled for one year.

Dr. Rugg moved, and it was voted, that both resolutions be printed on the programme for the annual meeting of 1886.

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The executive committee have appointed for the semi-annual meeting the following programme:

"Contrasts in Medicine and the Medical Profession," Dr. L. C. Butler.
"Twenty Years' Obstetric Record," - - Prof. J. Henry Jackson.
"Prepared Medicines," - - - - - - Dr. C. F. Camp.
"Some Improvements in Dose-Dispensing," - Dr. A. B. Somers.
"Materia Medica and Therapeutics," - - Prof. H. D. Holton.
"Obstetrics," - - - - - - - - Dr. James Conland.
"Diphtheria," - - - - - - - - Dr. C. N. Hunt.
Semi-Annual Address, - - Vice-Pres. Dr. E. R. Campbell.

On motion, adjourned.

J. S. RICHMOND, M. D., Sec.

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INSANITY IN VERMONT—1835-1885.*

By Joseph Draper, M. D., Brattleboro, Vt.

Fellows of the Vermont State Medical Society:

In retiring from the office with which you have honored me, I purpose laying before you in concise form the record of this State in respect to its lunacy legislation and the medical jurisprudence of insanity for the half-century past. While insanity in Vermont is, in its essentials and in its entirety, part and parcel with that of the country, the manner in which it has been met and its problems solved is distinctive and worthy of special record.

I choose this subject because it is one with which I am most familiar, having been for eighteen years identified with the care of the insane of this State, and because the field has not before been surveyed from a professional standpoint.

The literature of insanity in this State as compared with that of some others in New England, is not voluminous. Apart from the reports of the Asylum for the Insane at Brattleboro and those of State Commissioners, and the Boards of Supervisors of the Insane, but little has been put in print.

In reviewing the transactions of the Vermont State Medical Society, I find but six contributions to the department of psychological medicine, exclusive of some reports of cases embraced within this domain.

A dissertation "On Insanity and the Insane" was presented to the Society in 1870 by Dr. Sumner Putnam, of Montpelier, and published in the transactions of that year. This paper was the result of much research into the causation and management of mental disease. Regarding the etiology, he says, "The idea I wish to impress is that insanity in all cases arises from abnormal or morbid action within the cranium, which action essentially consists in more or less abnormal cell change in the cerebrum, as readily produced perhaps by shock of the emotional or moral, as by disturbance of the organic sensibilities of the brain. A blow upon the head may cause insanity, and a blow to

* President's address, October 15, 1885.

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the spirit may do the same." Regarding treatment, he forcibly urges early and vigorous measures, even against the inclination of the subject. "Above all," he says, "do not abandon the patient to himself, or to his non-medical friends, who may have his good at heart, but do not know how to wisely seek it. If in a given case the causes are physical, try to remove them by medical, surgical and hygienic means; if moral, recommend change of scene, thought and pursuit. If the case is severe and unmanageable, send the patient to an Asylum, if the friends will so order. The prejudices and romantic stories of the day respecting mal-treatment and false imprisonment there received, are essentially false, and unworthy the spirit of the age."

In 1876 a monograph upon insanity was read before the Society by Dr. H. H. Atwater, of Burlington, which will be found in the transactions of that year. This paper is comprehensive, embracing the nomenclature, the pathology, the causes, the diagnosis, the types, the symptoms, the prevention, the treatment, and the prognosis of the malady. The notable point is the dividing line between *insanity* and *unsoundness*, in which he differs from most authorities, who limit the latter to congenital states of deficiency or perversity, while the author of this paper places in the latter category also mental impairment resulting from uncured epilepsy, senility, paralysis, hysteria, apoplexy and cerebral exhaustion. In concluding, he urges upon physicians the importance of making themselves competent to treat insanity, for the reason that it is generally a curable disease, and a not uncommon one, and liable to become incurable solely through ignorance or neglect of the proper treatment at the proper time.

In addition to the two papers outlined upon this subject, may be added,

One upon the Pathology of Insanity, (1875,)

One upon the Pathogenesis of Insanity, (1877,)

One upon Hysteria in Insanity, (1879,)

One upon Neurasthenia of the Ganglionic Nervous Centres, (1881,) by the writer of this review, which, with articles based upon detailed cases, complete the literature of the subject so far as it exists in published form in this State. Of the latter contributions, I find an interesting one on Disease of the Brain by Dr. Upham, of Randolph, (1864.) One also of Hystero-Epilepsy, by Dr. Emma H. Calender, of Middlebury, (1875,) and one upon Puerperal Mania, by Dr. Putnam, (1878).

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The earliest official inquiry into the number and condition of the insane of Vermont, was made just half a century ago. A committee appointed by the Legislature of the preceding year made investigation in 1835, and embodied the results of their research in a report to the General Assembly of that year. The returns were too incomplete to show even approximately the total number of the insane of the State, only fifty-nine towns responding to the inquiries made. These towns afforded a total of 144 persons, and some conclusions of interest were shown relative to the condition of these. Twelve, or a little over eight per cent. of the whole, were minors. Twenty-five, or a fraction over 17 per cent. of them, were between twenty and thirty years of age. Thirty-two, or a trifle above 22 per cent., were between thirty and forty years of age. Twenty-five, or 17 per cent., were between forty and fifty years, and the remainder, about 36 per cent., were over fifty years old, or of ages unascertainable. From the report of this Committee I make the following extract, "These victims of mental alienation are found among all classes of the community, and their condition of life under this visitation of Providence has been too long neglected. This long delay, with unkind and injudicious management, has in many cases obliterated the last ray of returning light, so that curative treatment has become useless. Some indeed by their friends are treated with kindness and affection, and made as comfortable as circumstances will admit. Some are suffered to wander abroad unprotected and forgotten, and apparently unlamented, the constant scorn and derision of the unthinking, while others are doomed to occasional or perpetual chains and imprisonment in cages or private apartments."

Upon the question of restraint, their inquiries seem to have been particular, as eighteen, or 12½ per cent., were returned as *continually* confined, and fully as many more *occasionally* restrained. The Committee conclude their report with the statement that they "do not find such an *amount* of wretchedness and misery among the insane in this State as is disclosed in the reports from some other States, yet sufficient is developed to awaken sympathy, and enlist every benevolent mind for their relief; and since the statistics of insanity abundantly establish that diseases of the *mind* yield to medical treatment, the cause of the insane commends itself with peculiar force to the favorable notice of the Legislature." At this distance of time, this first report upon the condition of the insane of this State has for us a peculiar interest. It is interesting to compare the relative frequency of in-

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sanity then and now, at the same ages; and also to consider in what respects the condition of the chronic insane outside of Asylums at the present day has been improved.

Confining the comparison to the results of personal observation of the 1,144 cases admitted to the Asylum in the twelve years last past, I find that the percentage of those under twenty years of age, is 3⅗ per cent., or less than half the proportion shown in the returns of 1835. Of those between twenty and thirty years, the percentage stands at 21, against 17 in 1835. Those between thirty and forty years, stand alike at 22 per cent., barring fractions. Those between forty and fifty years stand nearly in the like proportion as those between twenty and thirty years, viz: 22 to 17 fifty years ago, while those of unascertained ages and past fifty years stand as 31⅓ per cent., against 36 in 1835. These comparisons slightly militate against the theory that insanity is on the increase, especially in those forms dependent upon constitutional causes, which are apt to develop in early life, inasmuch as in the more recent cases there is a smaller proportion under twenty years than in the earlier enumeration. It will be seen, however, that no general conclusions of moment can be based upon so limited data. As regards the condition of the insane now who are distributed through the community, in comparison with those half a century ago, it will doubtless be conceded that they are more humanely viewed. The day of chains has passed, and their confinement is not now in unfit places, as in caves, or outbuildings, unwarmed, and destitute of all hygienic conditions. They are no longer treated as devoid of common sensibilities.

Prior to 1835 no legal provision for the care and treatment of the insane had been made in this State, and only one act in reference to the insane existed upon the statute book. This (passed November 17, 1825) provided for the safe custody of dangerous lunatics in prison, or in charge of their friends, the latter giving bonds for them in the discretion of the County Courts, or the Judges of said Courts.

Since 1835, no less than fifty legislative acts or resolves having a bearing upon the care and oversight of the insane have been passed. Of these, the Acts of 1878, and their subsequent amendments, are those now chiefly in force, except such as were enacted in 1840 and 1841, and amended in the revision of 1860, relative to insane criminals, and those of 1845 and 1848 relating to insane convicts. The acts aiding in the creation of asylum provision are not included in the foregoing enumeration. The act incorporating the Vermont Asylum

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for the Insane made the Court of Chancery a Board of Visitors, and conferred upon it the power of supervision, and the correction of any abuses of trust. This Court was abolished in 1840, and since that time the Judges of the Supreme Court of the State, who then succeeded to the functions of the Court of Chancery, have been regarded as the chartered visitorial and corrective authority.

For the purpose of further guaranteeing the interests of the wards of the State, an act was passed in 1845 providing for the annual appointment by the Legislature of a Commissioner of the Insane, whose duty specifically defined should be "monthly, or oftener if need be, to visit said asylum, with the Trustees or alone, to examine into the condition of the institution, the receipts and expenditures, the management of the patients, and the general welfare of the asylum, and to make report thereon annually to the Legislature."

This office was continued for thirty-three years, when it was abolished, and succeeded in 1878 by a Board of Supervisors, which, in addition to the general visitorial authority held by the Commissioner, was also empowered "to investigate any causes of complaint against the treatment of the patients, or any case in which wrongful commitment or detention was charged, and make such lawful orders as may be required." In 1882, the discharge of *non compos*, non dangerous inmates, (harmless dements), was made imperative upon the Board; and in 1884 the power of making conditional discharges was added, and authority given the Supervisors to continue their oversight of patients thus discharged, and also to embrace all the insane of the State, whether in confinement or not, within their supervision.

The law regulating the commitment of patients, has also been from time to time modified as respects the medical evidence required. The earliest legal requirement of a medical certificate, was contained in an act passed in 1855, providing for the appointment of a medical examiner by the Court of Chancery for Windham county, (in which the Asylum is situated), whose duty it was to examine and certify to every applicant for admission, (not being under legal guardianship), and this law continued in force until the general revision of the lunacy laws in 1878, when the certificates of two physicians, resident of the same Probate District as the patient, were required, together with that of the Judge of Probate of the same district, attesting the integrity and skill of the medical men.

In 1882 the physicians were further required to give in writing, and

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make it a part of their certificate, the *reasons* for the opinion to which they subscribed, and the two physicians making such certificate were interdicted from being members of the same firm, and neither should be an officer of an insane asylum in this State.

In 1884 it became a requirement that the physicians should make the foregoing certificate *under oath*, together with the added statement that they are residents of the State, and legally qualified to practice as such.

There is reason to believe that the census returns have always been incomplete or erroneous. That of 1880 is doubtless most carefully obtained, but in the total for this State were included something more than one hundred residents of the Asylum who belonged to other States. With these eliminated, the number properly reckoned within the State of Vermont at that date would be about nine hundred. Toward providing accommodation for the Insane, this State has done but little. Vermont alone, of all the New England States, has created no institution for the care of this class. By reason of some small appropriations toward extension of accommodation at the Asylum in Brattleboro, aggregating but $23,000, and made prior to the year 1844, she secured a preferred right in the matter of admissions there, and this to the present time has sufficed for the demands of her citizens. Its doors have never been shut to the admission of any class of applicants within her borders, and in the steady adherence to this recognized obligation it has come to be devoted practically almost entirely to the residents of the State. The time must eventually come, however, when added provision will be necessary to meet the wants of the gradually increasing number of the insane. Besides the three classes ordinarily provided for, and supported severally by private means, by towns, and by the State, according to the legal obligation existing, the criminal insane have likewise been received. An examination of the records of the Asylum shows that fifty-three of this class have been admitted; twenty-five having been sent directly by the County Courts, and twenty-eight having been transferred to the Asylum from the prisons to which they were first committed. But two of these were women. Twenty-one of the whole number were charged with or convicted of crimes against the person, and the remainder with crimes against property. For the past half-dozen years this class has averaged about twenty, and has been isolated from the non-criminal classes, and provision for their care has been repeatedly urged, but as yet without effect, in connection with one of the prisons.

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In reviewing the jurisprudence of insanity in Vermont, the record is creditable in so far that the ends of justice have as a rule been subserved. I am unable to cite a case so far as my investigations extends in which either popular feeling or untenable theories respecting the nature of insanity, or the responsibility of the insane, have triumphed over impartial juries and sound judicial rulings. This is somewhat remarkable, from the fact that within the past fifty years the tests of insanity have been much altered, and, as universal experience testifies, a new theory for a time bears undue sway, and mistakes are almost inevitably made.

Half a century ago Esquirol was perhaps the foremost authority upon mental maladies. Apart from congenital infirmities, he recognized the forms long known as mania, melancholia, and dementia, to which he added that of monomania. To this distinction is due much of the subsequent modification of forensic medicine. The existence of a deranged state coincident with the faculty of reasoning was a paradoxical admission. The recognition of sound reasoning powers with an irresponsible state came slowly to the comprehension of medical men, and still more tardily to those of the legal fraternity. Esquirol showed that a single false premise might constitute a derangement, a single delusive idea control the whole life of an individual, and dominate all the intellectual processes, reasoning being logical, though based upon this false premise. The doctrine of phrenology here played no small part in the changed views respecting the nature and forms of insanity. The recognition of moral as well as intellectual faculties in the mental constitution, opened the door to the consideration of their bearing upon the insane mind.

Into this stepped Prichard, who, in a treatise that has never been superceded, demonstrated that derangements of the moral sense and perversities of the instincts may so completely change the character of an individual as to leave no question of his insanity, even though no intellectual delusion or impairment be discernible. I am well aware that the doctrine of phrenology has for the generation past been seldom avowed, yet it seems to me it has always been silently and practically believed in, even by those who would disclaim it. Had it not been its misfortune to be seized hold of as a means of livlihood by those who prostituted its truths to mercenary ends, it seems to me it would have been sustained from its inception. The more recent doctrine of cerebral localization, which finds favor under the demonstra-

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tions of Fourier and others, is based upon the same principle of the brain, a plurality of organs, and if motor centres are susceptible of demonstration, it is little stretch of imagination to presume there are mental centres as well. The difficulty in the way of this belief is conceded to be the impossibility, as yet, of anatomically demonstrating separate organs; but all analogy, it must be admitted, goes to favor this view. Concert of function, or harmonious physiological brain action, must of necessity depend upon the most intimate nerve connections, so that to the naked eye, and even by all the means science as yet has brought to its aid, the whole cerebral mass appears as a single organ. Until the intimate structure of the nerve centres can be more clearly traced or unfolded, it seems to me we may lean with reasonable confidence upon the conclusions reached by analogy and comparative reasoning. Pathological as well as physiological laws are alike wanting in conclusiveness, and for the same reason. The intimate relation of the organs to each other, (if we presume the plurality doctrine), favors the extension of morbid processes so as to blend a whole region ofttimes in the malady, and give rise to complex phenomena often of the most perplexing kind, yet without this doctrine the phenomena of monomania and of moral insanity find ill support. To the mind of the writer the researches of Fourier, after the lapse of half a century come to the rescue and support of those of Gall and Spurzheim. Without further speculation, medical jurisprudence in America has in the last half-century been based upon the recognition of the views of Esquirol and Prichard, and in this the great exponent of their view was for forty years our countryman, Dr. Ray. If in his leanings he went far to the side of leniency, farther than to-day is deemed warranted, the service he rendered to jurisprudence was world-wide and enduring.

A review of the record of Vermont shows, so far as I am able to present it, due respect to the mental condition of the criminal, without forgetting the rights of the community to be protected against irresponsibility.

At the risk of a little tediousness in detail, I must make brief individual mention of those cases the State has had specially to deal with, as without this my paper would be incomplete, as a running record of insanity in this State in the half-century past.

One of the earliest cases, (if not the first), in which the plea of insanity was raised in defence of a capital crime in this State, was in the Or-

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ange County Court in 1840. Benj. F. Killam was indicted for the murder of his wife in 1839. The act was committed with a razor and by cutting her throat, and the apparent atrociousness of the crime excited great feeling in the community. When the case came to trial something more than a year had elapsed, yet the Court House at Chelsea was too small to give audience to the excited crowd that flocked to attend. Moreover, too, the prisoner had then recovered from his attack. The trial took place in the village church, and lasted three days. Dr. Rockwell was called as an expert to attend his trial, and, after hearing all the evidence in the case, unqualifiedly gave it as his opinion that the prisoner was sane when tried, but insane when the murder was committed. The case was submitted to the jury without argument by counsel, and the verdict was rendered by them without leaving their seats, after a short conference with their foreman. "Not guilty by reason of mental derangement" was the finding; unconditional acquittal was the result; but the judge remanded the prisoner to jail for his own safety, where he remained seven years before he was finally unconditionally released, though allowed out on parole and privileged to pursue his calling, that of repairing clocks and watches, after the first year, not only at the county seat, but in the neighboring towns. Some years after he was convicted of another crime in which the plea of insanity was not raised, and served ten years in the State Prison. In 1876, long after the expiration of his term of imprisonment, he was committed to the Asylum, in the manner of an ordinary insane person, by the civil authorities, and here he still remains. Though suffering from melancholia in its chronic form, and laboring under delusions of persecution, his memory is clear, and his account of his own experiences is one of no ordinary interest. Did space permit, I could not better interest this audience than by introducing here this patient's own very graphic portrayal of the delusions and overwhelming impulses that bore sway over his mind, and led to the act which he blames his neighbors and friends in not saving him from by timely arrest and custodial care.

In 1843 one Freeman Burns was arraigned for trial in the Orleans County Court, charged with breaking and destroying public property, "and after a due hearing the cause was submitted to a jury duly impanelled and sworn, who returned their verdict of not guilty by reason of insanity. Whereupon, after a full hearing of the case, and it being shown to the Court that it was unsafe for the said Burns to run at

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large, it was ordered by said Court that he be confined in the Vermont Asylum for the insane at Brattleboro." He was brought loaded with chains, a witness to the prevailing belief that an insane person was endowed with supernatural strength. He never became sane, and died in the Asylum in 1871. This was the first case thus provided for of the criminal class in this State.

In 1845 John Piper Sheen was indicted in the Grand Isle County Court for "assault with intent to kill" one Barbary Pike. The indictment sets forth the charges to wit: "That John Piper Sheen, late of the town of Isle La Motte, in the county of Grand Isle aforesaid, on the 15th day of March, A. D., 1845, with force and arms at the town of Isle La Motte aforesaid, in the county of Grand Isle aforesaid, feloniously, wilfully, and of his malice aforethought, *with a certain dagger of the price and value of fifty cents*, which he, the said Sheen in his right hand then and there had and held, and in and upon one Barbary Pike, of the said town of Isle La Motte, in the County of Grand Isle aforesaid, in the peace of this State then and there being, did make and assault with intent, her, the said Barbary Pike, then and there feloniously, wilfully, and of his malice aforethought to kill, and other wrongs to the said Barbary Pike then and there did, contrary to the form, force and effect of the Statute in such cases made and provided, and against the peace and dignity of the State. And the State's Attorney upon his oath further gives the Court aforesaid here to understand and be informed, that the aforesaid John Piper Sheen, on the 15th day of March, A. D., 1845, with force and arms, at the town of Isle La Motte aforesaid, in the county of Grand Isle aforesaid, in and upon the body of one Barbary Pike in the peace of the State then and there being, did make an assault and then and there did beat, bruise, wound, and maltreat her, the said Barbary Pike, so that her life was then despaired of, and other wrongs to the said Barbary Pike then and there did to the great damage of the said Barbary Pike, contrary to the form, force and effect of the Statute in such case made and provided, and against the peace and dignity of the State; wherefore the said State's Attorney prays the advertisement of the Court hereupon, and that the usual process may be awarded to bring the said John Piper Sheen before the Court here, that he may be put to answer thereto."

My apology for this quotation *verbatim et literatim*, is that it so fully shows the legal verbiage of the times. The result appears in the

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words following, to wit: "Whereupon the said John Piper Sheen being arraigned before said Court, was put to plead to the foregoing information, and pleaded that he was not guilty, and put himself on the county for trial, and a jury being impannelled (here follow their names) twelve good and lawful men of the vicinity, who on their oaths say that he is *not guilty by reason of insanity:* Whereupon it is considered by the Court here, that it would be manifestly dangerous to the peace and safety of the community that the said insane person should be permitted to go at large, it is therefore ordered that he be confined in the Vermont Asylum for the insane at Brattleboro, until the further order of this Court, or until otherwise discharged by order of law," etc. This person still remains in confinement at the Asylum, and is the oldest criminal lunatic now in the State. Although forty years have elapsed, no modification in his tendencies has taken place, and he is still the subject of active homicidal impulses, the result of active hallucinations. Though almost constantly secluded from association with others, his bodily health has never suffered, nor a tinge of melancholy ever clouded his mind, and to all appearances many years of life may yet remain to him.

In 1849 Philip Conolly was arrested and held for trial in the Windham County Court, charged with having committed the offence of "malicious mischief." He was not indicted by the Grand Jury, by reason of insanity, but sent to the Asylum "until some further order in the premises." His form of insanity, that of sub-acute mania, ultimately became chronic and more delusional in character. He still remains in the Asylum, his discharge as a harmless insane person having never been warranted.

In 1854 Robert Harris was arrested, and brought before the Windsor County Court, to answer to the charge of "assault with intent to kill," but, as in the preceding case, was not indicted by the grand jury for the offence, but certified to the Court as an insane person. He was ordered "to be transported to the Asylum at Brattleboro, and there to be kept till his going at large shall have ceased to be dangerous to the peace and safety of the community, or he be otherwise discharged or properly provided for according to law." This man was in a broken state of health, and continued in a gradual decline until his death, in the following year.

In 1857 one Thomas Wellman, otherwise called James Jenks, was arrested and placed in the Orleans County jail, on charge of "assault

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and battery." By special act of the Legislature his support was provided for by the State, "until he is fully restored to soundness of mind." This did not result. He continued insane and violently disposed till his decease, in 1858.

In 1858 David Goodell was committed to the asylum by the Windham County Court, not having been indicted by the Grand Jury, upon the charge of "assault with intent to kill." This man had previously been an inmate of the asylum, and labored under chronic delusional mania. He remained under the order of the Court until 1883, when, his condition having become so far modified as to warrant his discharge upon application of the State Board of Supervisors, the Court which committed him vacated the original order, and substituted that for his discharge, when he was taken charge of by the authorities of the town where he originally belonged.

In 1859 Ann Hoofman was confined in the Grand Isle county jail on charge of "adultery." The Grand Jury failed to indict by reason of insanity, and so certified to the Court, by which she was ordered sent to the Asylum. She remained insane till her death in 1863.

In the same year, (1859), at the Windsor County Court, the Grand Jurors made the following presentment, in the case of Shepley Roberts: "That Shepley Roberts, late of Chester, in the County of Windsor, aforesaid, *not having the fear of God before his eyes, but being moved and seduced by the instigation of the Devil*, on the 31st day of October, A. D., 1859, with force and arms, at Springfield, in said County of Windsor, a certain dwelling house of one John White, there situated, feloniously, wilfully and maliciously did set fire to, and the same dwelling house then and there, by such firing as aforesaid, feloniously and maliciously, did burn and consume, contrary to the form of the statute in such cases made and provided, and against the peace and dignity of the State, and have endorsed on such bill of indictment the words following: This bill was found. Respondent insane.

WALTER PALMER, Foreman.

And have filed in said Court the following certificate, according to the statute in such cases made and provided. And the Grand Jurors aforesaid, on their oath aforesaid, do hereby certify to said Court, according to the statute in such cases made and provided, that the said Shepley Roberts did set fire to and burn and consume said dwelling house, and that said Shepley Roberts at the time of the commission of said crime was and still is insane, and that said Grand Jurors do not

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indict said Shepley Roberts by reason of his said insanity; and the said Grand Jurors deem the discharge and going at large of said Shepley Roberts to be manifestly dangerous to the peace and safety of the community; and that said Shepley Roberts has not sufficient estate to defray the expense of his imprisonment in the county jail, or in any other place, and that said Shepley Roberts is now confined in the county jail in Woodstock, in the county of Windsor.

WALTER PALMER, Foreman.

And the said Court, having made inquiry as to the matters contained in said certificate, and it appearing to said Court that all the matters contained in said certificate of said Grand Jury are true:

It is ordered by said Court now here in session, that said Shepley Roberts, late of Chester, aforesaid, be confined in the Asylum for the Insane at Brattleboro, in the county of Windham, at the expense of the State, until he shall be discharged by order of this Court.

The Sheriff of the county of Windsor is charged with the execution of this order, and will remove the said Shepley Roberts from the jail in said Woodstock, where he is now confined, and deliver him as soon as may be to the custody of the Superintendent of said Asylum in said Brattleboro.

Done in and by order of said Court at said Woodstock, this 20th day of December, 1859. NORMAN WILLIAMS, Clerk."

This person still remains an inmate of the Asylum. He had been three times a patient in the institution before his commitment as a criminal lunatic. The foregoing order of the Court has been given in full for two reasons. It shows the mode of procedure at this time in detail, and also embodies the ancient idea, (long enough incorporated at least to have become obsolete), of the act having been prompted by his Satanic Majesty. The definiteness of the order respecting his discharge *by this Court alone*, has since, (in 1882), become the general law; no other authority than the Court which commits the lunatic having now power to release him.

In 1861 Samuel Lindon was committed to the Asylum by the Court of Grand Isle County, charged with "assaulting and beating one David S. Sweet, of Alburgh, in said county," and having been certified to as insane by the Grand Jurors of this county, was ordered to be committed to the Asylum. He labored under acute mania, from which he recovered, and was discharged unconditionally, after six months' care and treatment.

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In 1863 Jesse C. Davenport, of Manchester, was tried in the Bennington County Court for murder, and acquitted by reason of insanity. This case was one of some intricacy. Two medical experts (Dr. Chapin, of Canandaigua, and Tourtellot, of Utica, N. Y.), were present during the trial, and the case was fully written up and published in the American Journal of Insanity, April, 1864. In the circumstances of the homicidal act, the prisoner being irritated wantonly, and wrought upon by mischievous parties until driven to retaliation and revenge, in which evidence of premeditation was admitted, there was nothing distinctively insane. In a careful review of his case it could not be classed under any special type, but exhibited "faint marks of all the chief divisions of mental disease blended together." It was shown that he suffered an attack of sub-acute mania some seventeen years previously, and that since then his mind had been weak and unstable; sometimes apparently deluded, always morbidly excitable, and an act of self mutilation, (semi-castration), some two years before the homicide, was adduced as evidence of insanity, *per se*. In the examination of the experts, the direct question whether or not the prisoner was insane at the time of the homicide? was not allowed to be put. Neither was the case allowed to be hypothecated; but the formal interrogatory was the following: "If the respondent exhibited the symptoms testified to by each witness in respect to his mental condition, what do they unitedly tend to prove in regard to his insanity?" The medical witnesses did not essentially differ in their replies to this. The verdict of the jury was "not guilty by reason of insanity," and the order of the Court was that he "be confined in the Insane Asylum at Brattleboro, according to law, *at his own expense*." He was received into the Asylum on the 21st of December, 1863, and remained until the 18th of February following, when he was removed by his brother, and otherwise provided for.

In 1865 Charles Crehore was tried in the Rutland County Court on charge of "larceny," and acquitted on the ground of insanity. He was held for some ten years, his discharge being of doubtful expediency, when he assumed the responsibility, and settled it by eloping.

One John Cass was in 1866 sent to the Asylum from the Addison County Court, not having been indicted of the crime of arson by reason of insanity. Nothing whatever is known of the history of his case, but the mark of a sabre cut on the head indicates that he served in the army. He remains in the Asylum, but has never been able to give any clue to his identity.

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In 1868 George Willey was brought before the Grand Jury of Orange County charged with "setting fire to a building with intent to burn the same," but was not indicted by reason of insanity. He was ordered to be confined in the Asylum, and *safely kept until such time as his going at large would be safe.* He still remains in the Asylum under this commitment, though a number of times having escaped therefrom, which has necessitated his close and almost constant confinement.

Jonathan Weston was committed to the Asylum from the Caledonia County Court in 1869, charged with "horse stealing," but not indicted by reason of insanity. He was in poor health, and died about three months after admission.

In 1870 John Knowles was tried in the Essex County Court for the crime of "arson," and committed to the Asylum in due form, where he recovered, and was discharged in the year following.

In 1873 Isaac Cobb was placed on trial in the Windham County Court, charged with "wickedly and maliciously killing a certain mare," and, being found insane, was committed to the Asylum where he still remains. In this case there was a morbid moral perversity, engrafted upon a naturally weak mental foundation.

In this same year, 1873, Edward M. Shaw was brought before the Windsor County Court, charged with the crime of "arson," and the Grand Jury reported to the Court that they found said Shaw did set fire and burn the buildings as charged, but they failed to find this a true bill by reason of his insanity at the time. He was confined in the Asylum, where he remained until his decease in 1876. In this case insanity was strongly hereditary, more than one member having been an inmate of the Asylum, and others having been likewise deranged.

In 1874 one Thomas King was brought before the Rutland County Court, on a charge of "larceny." He was tried for the offence, and acquitted by reason of insanity, and ordered to be committed to the Asylum, to be there kept and cared for at the expense of the State, "so long as the going at large of the said Thomas King will be manifestly dangerous to the community." He remained in the Asylum until the spring of 1880, when he eloped. Near the end of autumn he returned, and begged to be again received into the Asylum. He was taken in, and put to work with the outside laborers. The result of this experiment was a second elopement within two weeks, and this time, in view of the fact that he had all summer been at large without falling into the meshes of the law, he was unconditionally discharged. In less

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than another month he was under sentence for "vagrancy," for a term of six months, in the Work House at Bridgewater, Mass. Not liking this, he again endeavored to return to the Asylum, informing the authorities at Bridgewater, that he had escaped from Brattleboro. But here the door had been shut against him effectually. No further news of him came for near a couple of years. Then a letter addressed to "The Resident Medical Officer of the Brattleboro Lunatic Asylum, Vt., U. S.," came from Essex County, England, asking a certificate or a letter showing for how long and for what reason he had been an inmate of the Asylum. The letter was from a clergyman who knew the family of which King was a member, and whose real name was Moss. "The poor fellow," he wrote, "has no wish to work, and while living with his brother has fired a stack, and his friends want to save him from penal servitude. He does not now *appear* insane; but some evidence from you will be corroborative of their argument that he is not responsible for his actions. We were sorry he ever came home, as he seems incapable of taking care of himself."

This case well illustrates a type of mental psychology closely allied to the criminal and the imbecile. The fault is a congenital one; there exists a mental unsoundness, but not a state of mental disease. The mental scope is narrow, the mental operations faulty, but not morbid. He belonged to the genus "tramp," which a few years ago became so far developed and organized in this country as to call for the most stringent legislation, which very quickly checked the growing evil. These cases are and should be held amenable to law, as those laboring under morbid cerebral action cannot be. The further history of this case I am ignorant of; but my return to the writer of the letter was to the effect that he was not insane in the sense of laboring under diseased cerebral action.

Amelia Jenkins was this same year, (1874), "duly tried according to law" in the Caledonia County Court for "attempt at arson," and found not guilty in consequence of insanity. She was committed to the Asylum by order of the Court, where she remained until her decease six years after. This case was one of chronic delusional mania, of seven years' duration before the criminal act.

In 1875 Augustus Buskey, a French Canadian, was brought before the Windham County Court, and indicted for "assault with a dangerous weapon with intent to kill." He was tried and acquitted of said crime by reason of insanity, and by the Court committed to the Asy-

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lum in the usual form. This case belonged to the same class as that of King, already dwelt upon at length. He never manifested any delusion, nor mental excitement, but had a number of complaints, the chief being a spinal weakness, upon which he rung the changes for the purpose of avoiding exercise or labor, and securing treatment as an invalid. He eloped by picking the lock of the outside door, after a five years' residence in the Asylum, and he has never been heard from.

In 1876 Edson Cook was brought before the Grand Jury of Lamoille county, charged with the murder of his son. The complaint, couched in the terms before commented upon, set forth that the said Edson Cook, "not having the fear of God before his eyes, but being moved and seduced by the instigation of the Devil, on a certain day, with force and arms, at Hyde Park, one Charles Cook, in the peace of God and this State then and there being, feloniously, wickedly, wilfully, and of his malice prepense, did make an assault on the said Charles Cook *with a certain club or axe of the value of four cents*, which the said Edson Cook then and there held in his right hand, struck him, the said Charles Cook, upon the head of him, the said Charles Cook, then and there feloniously, wilfully, and of his malice prepense did strike, and then and there by said club or axe did perforate and break the skull of said Charles Cook, and thereafterwards, on the said certain day, the said Charles Cook did die of said blow and wound, so inflicted by the said Edson Cook."

Then follows in the same manner another charge or count, culminating in another "blow upon the front and top part of the head, of which mortal wound the said Charles Cook then and there instantly died." The apparent absurdity of the foregoing *duplicated* charges to any non legal reader is my only excuse for quoting *verbatim*, the several counts in this indictment. Then follows the usual indorsement that by reason of insanity this bill of indictment is not found, and the order of the Court for the confinement of the prisoner in the Asylum at Brattleboro. This case was one of chronic recurrent mania. The prisoner had been in the Asylum the year before as a patient for a period of four months, and was removed by the son, whom he killed only three months afterwards. Nine years have elapsed since his committal by the Court, and he has had no interval of sanity, nor freedom from constant homicidal mania.

In 1878 John M. Flanders was tried in the Lamoille County Court on charge of "arson," and found not guilty by reason of insanity, which

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had shown itself in divers ways for a year and a half previously. He was ordered to be cared for in the Asylum. His death occurred here in 1883.

Woodbury Tollman, the third case committed from Lamoille County Court, was sent to the Asylum in 1881, and still remains. He was charged with "a murderous assault," was subject to epileptic attacks, and continues a dangerous person to be unrestrained.

Matthew McCaffrey was tried in the Washington County Court in 1883, for the murder of his wife the previous year. The crime was a double one, he having at the same time murdered his mother, though the indictment did not cover both cases. Since the murder he had been confined in the Asylum, by action of the town authorities and advice of the State's Attorney. During the year he was thus under observation at the Asylum, sufficient evidence of his insanity was shown to leave no question as to his irresponsibility. He had been a patient in the Asylum two years before the murder, and never fully recovered. His mania is periodical.

The last case committed to the Asylum as a criminal lunatic was S. Warren Heald, from the Windsor County Court, in 1884. He was tried for "assault with intent to kill," adjudged not guilty by reason of insanity, and ordered to be confined in the Asylum at Brattleboro "*until* in the *opinion* of the *Supervisors he is in a proper condition* to be *discharged*." This latter condition is here for the first time specified; but very properly, as the law of 1882 makes it the duty of the Board of Supervisors to bring a petition in behalf of all criminal lunatics, whose condition may warrant the consideration of a discharge before the Court having express jurisdiction in the matter.

The convict insane number twenty-eight in all, nine of whom are now held as proper subjects for continued care and custody. The history of most of these cases is meagre. Some were probably laboring under mental disease when convicted, but the evidences of it were too obscure to be made point of in their defence. Eight of the twenty-eight were convicted of high crimes. The first of these cases was a colored man, once a slave, and homicidal in his disposition during the whole of his thirteen years of confinement at the asylum. He was committed to the asylum in 1850. Of all the twenty-eight only one recovered, and was returned to prison to serve out his remaining sentence; and one only was found to have feigned insanity, and to have been remanded to prison.

The plea of insanity in defence of capital crimes has been occasion-

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ally raised unsuccessfully in the Courts of this State. This has twice occurred during the time of the writer, once in the Orleans County Court in the case of Hayden, tried for the murder of his wife in 1878, and once in the Washington County Court, in case of Sanders, tried for the murder of his wife's paramour, in 1885. The defence in the case of Hayden was transitory mania. It was not sustained, as it was not shown that he labored under a diseased state of mind, and moreover it was the result of deliberate determination, strengthened or fortified at the time by drink, which was ruled by the Judge to aggravate rather than mitigate the crime. He paid the full penalty of the law. Medical experts, having heard all the testimony in the case, were allowed to reply to the following question: "Supposing all these facts that you have heard testified to in the case by defendant's witnesses, and witnesses for the prosecution are true, what is your opinion—do you think he was sane or insane at the time of the alleged murder?" This form of inquiry was excepted to by defendant's counsel, but it was held "that the question need not embrace a statement of the facts developed in the evidence," they having already been heard by the witness. In case of Sanders, emotional insanity was the attempted defence. The evidence showed premeditation, and no unfounded suspicions amounting to delusions, and the act, as in the case of Hayden, was done deliberately, and in cold blood. Some degree of unsoundness of mind, congenital or constitutional, was conceded by the medical witnesses; but an insane state as based upon any morbid condition having supervened upon his natural, was denied. He was sentenced to twenty years in State Prison.

Vermont, like other States, has not been exempt from insane tragedies, which independently of any law but that of disease, now and then break upon the community, and blight or destroy a whole family with the quickness of the lightning's flash, and oft-times with as little portent of the gathering outburst. These cases are not to be found in the records or files of the Courts. The homicidal acts are closed by the self-destruction of the principal, in which the horrible tragedy culminates. The history of the whole thrilling event is a sealed volume, and its contents can only be speculated upon with any degree of certainty by those accustomed to trace and see the working of diseased minds.

Two notable instances of such tragic acts have occurred within the past ten years in this State, both within the limits of Caledonia county,

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and, singularly enough, within a half dozen miles of each other. How far the last may have been suggested by the first is a query that obtrudes itself upon our consideration at the outset.

The following detailed account of one of these cases has been furnished me by Dr. R. T. Johnson, of West Concord. "Silas Wilder, town of Lyndon, born October 11, 1839, always sick and fussy until about ten years of age, then healthy as other boys; at about eleven years of age had what she (the sister) called queer spells; had the notion if he went into a room where there was steam, or got the breath of a horse, it would kill him, and would almost go wild. When about twenty-two years of age began to complain of nervous feelings creeping over him, would say he felt funny, and was at those times very cross. When about twenty-six years of age, when these spells (as he called them) came on, he would be unconscious from twenty to forty minutes, and from that time until first day of February, 1876, (the day of the tragedy), they were more severe, and of longer duration, at times two hours, and had increased in frequency to sometimes three or four a day. The night of January 31 he was bad all night, (his wife says), did not sleep any, started in the morning, (February 1,) to go to the barn to do the chores, was gone about fifteen minutes, did no work at the barn, came to the house, sat down to the table before the rest of the family were ready, ate a few mouthfuls, jumped up and said, 'I'll settle this,' went into the wood-shed, got an axe, and came back. Father and wife took it away from him; with pocket knife he stabbed his wife twice, then cut his father's throat: the mother went to the door to call for help; Wilder followed her, striking across her neck with the axe, severing her head from her body, then struck the axe into his father's head, leaving it there. Wilder then went to the barn, cut his own throat three times, and finished by hanging himself with a halter. The sister has no recollection of his having convulsions in early childhood, but strange freaks and hallucinations commenced as early as eleven years of age."

The periods of unconsciousness referred to in the foregoing account were periods of which he had not afterwards any recollection. There was no motor complication, no convulsive action, no incoördination, but the acts performed during these periods were not conscious acts. The case seems to be one of mental or larvated epilepsy.

The second case occurred in the town of Sheffield, and in the year 1879. Byron Blake, the principal in this tragic act, was 26 years of age,

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and had been some four years insane. His insanity was of the delusional type, and he had been an inmate of the Asylum during the second year of his insanity. The immediate cause of this commitment to the Asylum was an attempt to poison the family, whom he believed had conspired to drug him. He was discharged and taken home at the instance of his friends, about two years before the tragedy, and though still deranged he was not regarded as dangerously inclined. The victims in this case numbered three; including his mother, sister, and step-father. The immediate cause of the act is unknown, a school teacher boarding in the family left at 9 o'clock in the morning as usual for her school, and nothing unusual had then occurred. At 10 o'clock a neighbor went to the house, and saw the consummated act. The three murdered members of the family had been apparently clubbed to death by a shot gun, the broken stock of which lay upon the floor, with some of his sister's hair entangled in the lock. The assault had apparently been unsuspected, as the women were evidently engaged in their morning household work. In the barn was found the murderer, suspended by a leathern strap or rein, and dead.

These tragedies unfortunately do not stand as isolated and rare ones. They have in the past few years been but too often duplicated, as the public prints will testify. So often indeed have homicidal and suicidal acts been associated, that the latter tendency is already in the view of alienists looked upon with some degree of suspicion, that along with it may exist the lurking other disposition; and even when only self-injury is feared, danger to one's family may not safely be unapprehended.

One other point in most of these tragedies is noteworthy; the homicidal attempts always precede the suicidal, and the mode of self-destruction is often different from that chosen for the murderous assault, as in the cases cited. In short, there seems to be in them much of method. Is this consistent with the theory of unconsciousness? In one way I conceive it can be so viewed. It may be done in an automatic manner, not involving a process of reasoning and voluntary action at the time of the paroxysm. But is it not probable that the act was the outcome of a previous conception? That in the moments of reasoning, morbid though that process be, such an act may have been frequently contemplated, at last taking a determinate form which, when the irresponsible paroxysm came upon the unhappy subject, he carried out in accordance with the idea thus shaped and lodged in his brain?

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Only in one other way in the cases detailed, can the suicidal ending be satisfactorily accounted for: the murderous mania having exhausted itself, and the enormity of the act burst upon the comprehension of the murderer, a quick revulsion succeeds, in which the only way of escape seems by violence to self, and such other and ready means as are most available are thus speedily resorted to and effectually used.

The fifty years' record, so far as I am able to give it, is now covered. I am unable to show all the instances in which the question of insanity may have arisen, but those in which it has prevailed have been noted in chronological order. In every instance the judgment of the Courts has been sustained by the subsequent history of the case.

There are vexed problems always to be met, involving proper provision for the insane. State provision, however liberal, is almost always inadequate. Even if it provides for all its insane Asylum accommodation, this is inadequate in another sense, inasmuch as the like provision does not meet the needs of all cases alike. In the past quarter of a century, particularly in the last twenty years, we have heard much discussion relative to the separation of the insane into classes; providing for recent and chronic, curable and incurable cases, apart from each other. This has been tried, and with a degree of practical success that must be acknowledged. There is no doubt but that the tendency of our time is toward a classified provision. The great burden of insanity is made up of chronic cases, and the care of these cannot be dissociated from the question of public economy.

In the early stages of insanity there are often wide departures from a state of general health, conditions which require medical treatment, and out of which mental disorders seem directly to proceed. All recent cases, therefore, ought to be surrounded with all the curative helps known to medical science, and all this involves corresponding expense. But when the mental disorder continues after the restoration of the general health, and curative means have been exhausted, when a condition of permanent insanity must be recognized, and the question of a life provision must be met, the problem becomes reduced to what is needful for meeting adequately the now settled condition. Much has been done toward practically solving this problem at the Willard Asylum, N. Y., which for seventeen years has been in successful operation. This departure was inaugurated in opposition to the general sentiment of those engaged in the care of the insane, and I may say in opposition to that of the American people, who instinctively rebel against

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caste distinctions, and most readily espouse the cause of the poor; but continued agitation of the question, and constant pressure to action, have effected results that vary somewhat from first theories.

The principle laid down in the form of a proposition in 1866 by the Society of American Alienists, "That insane persons considered curable and those supposed to be incurable should not be provided for in separate establishments," does not to-day express the prevailing sentiment of that body. The resolution moved at the same time to qualify the above proposition, so far as to admit that if the question presented in any State be "Shall the chronic insane poor continue to be confined in county (or town) poor houses, or shall provision be made for them in special Asylums, at a less cost than in hospitals?" and which received only the single vote of the mover (Dr. Cook, of Canandaigua, N. Y.,) in the affirmative, would doubtless now be sustained by the majority.

In fact, the point now reached in respect to this question is the compromise measure, that of providing for them by means of annexes or detached buildings in immediate connection with existing hospitals, and under the same general superintendence, but separately organized and independent in their practical working, equipment, and scale of expense. To this solution of the question but one principal objection arises, and that is the indefinite expansion of the plan to that extent that the individual is lost in the multitude. If any conviction has been definitely shaped by the experience of the writer, it is that there exists a limit to the practical efficiency of any institution; and in Asylums that mete and bound is the number which may be carried individually in the mind of the Medical Superintendent.

It has been customary in America to ignore in provision for the insane, social distinctions. The State institutions of this country have been erected, many of them, with lavish munificence, but in their wards have been gathered poor and rich alike, the classification being based upon their mental condition, and poverty being regarded as an accidental circumstance, as indeed it often should be. Still, in a broad view of the question we cannot disregard facts. The tastes and requirements of those bred in affluence are different in many respects from those accustomed in childhood to only the demands of a comfortable living. In the public institutions of England and Scotland where, as in the United States, both private paying and pauper patients are provided for, separate accommodations and corresponding dietary are also pro-

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vided. The justness of this policy can hardly be disputed, and the advantages of it are practical in their bearing.

The value of occupation to an insane person is universally conceded, and may be set down as a desideratum in the treatment of most cases.

While there exists in case of the pauper inmate a claim to whatever service he may be able to render, as an offset to the provision made for his care and treatment by the public, the like obligation hardly exists in the case of one who pays for such care and treatment, unless indeed the rate be so low that the labor must be regarded as a part of the consideration for such care, which in fact is often the case.

The outcome of the labor question, therefore, is in this country unsatisfactory; as the mixed relations of the private and pauper classes so materially interefere with a system of practical work. Wherever this has been most complete, as in the Asylum at Lenzie, near Glasgow, where absolutely every one not physicially incapacitated for labor is actually employed, it has been in institutions devoted wholly to the pauper class, to whom daily work was their born heritage.

The American plan as compared with the British, however, has not been without some advantages to the pauper class, as the latter has by this intimate association with the moderate paying classes participated in many diversions and enjoyments which have very generally been introduced into the curriculum of Asylum life, to take the place of manual employments.

Separate provision for the criminal class has been made in some States, and agitated in most. This question came before the Legislature of Vermont in 1878, and again in 1884, as has been before stated. The reasons urged by the officers of the Asylum for provision in connection with one of the penal institutions, were that the convict insane particularly, as a rule, are persons of bad lives previously, who by their voluntary acts have been adjudged to have forfeited the privileges of society.

They have been isolated from their fellow beings as unworthy associates, and by the decrees of justice been condemned to confinement for a term of years or for life. If it is right to separate this class from society when sane, it is right that they should be separated from the general class of the insane when laboring under mental disorder, provided they receive the care and treatment proper in the progress of civization, and in the light of medical science. Those acquitted of crimes upon the ground of insanity may not fall under the foregoing ban, but

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all the dangerously disposed require extraordinary precautions for their safe custody. Hence. it was claimed with reason that "it is not right thus to be obliged to convert the Asylum into a prison; and it is an injustice, if not an outrage, to place the convicted malefactor in forced relation to the worthy and law abiding but unfortunate citizen." (See Asylum Report, 1878.) In the ever recurring exigencies of society, history is continually repeating itself. The ancient colony of Gheel, in Belgium, has had its modern advocates. No New England community, however, could be found where such a settlement of insane persons could be formed, and even at home no attempt anywhere has been made to imitate it; but on the contrary a governmental effort was made to redeem it by establishing an Asylum in its midst, and putting the whole commune under a medical director, to correct and reform the abuses and neglects which had grown up and into it for almost a thousand years.

In Scotland a degree of apparent success has been made in the direction of boarding out the insane. The report of the Scottish Board of Commissioners for 1883 shows that out of an average of 10,000 insane variously provided for, about 1,600 were cared for in this manner. The class of persons thus provided for appear to be exactly such as it is made the duty of our State Board of Supervisors to remove from the Vermont Asylum; harmless persons, without active hallucinations and delusions, but requiring the care, oversight and direction of others; whose condition is uniform, and not subject to attacks of dangerous violence.

Respecting the selection of *guardians*, the Commissioners of Scotland very truthfully observe (Twenty-fifth Report, p. x. L.) "They are not to be found among those whose only motive for receiving them is the pecuniary profit which may be obtained. A good guardian must be one who has a natural aptitude for and liking of the duties to be performed. A guardian who looks only to the profit to be made, will not permit a patient to become so completely a member of the family circle as the patient ought to be, and as in most cases such patients really become. And with a view to attaining this desirable result, it is an element of importance that the guardian should be on a social level with his or her patient. The cases in which patients have been boarded with small farmers, or others, where the patient associates with persons in the employment of the guardian, have not generally been satisfactory in their results."

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In this somewhat lengthened quotation, if I mistake not, we may read the probable result of such an attempt to provide for the chronic insane in New England. How many heads of families among the yeomenry of Vermont would be found to enter upon the work of caring for one, two, or three such cases for the love of it, barring all considerations of profit, out of pure benevolence and philanthropy? One consideration, however, I can conceive might have weight in this mode of solving the problem—that of kinship If the pecuniary equivalent were assured, so that the non-productive member might not rest upon the household as a dead weight, the feeling of relationship I conceive might determine in many cases this method of care, but not in all. Not three months have elapsed since a harmless dement, supported by the State, was ordered discharged under the law by the Board of Supervisors. On the day ordered for his removal the Overseer of the Poor of the town upon which the burden of his support would fall when returned appeared, and desired to make, in behalf of the town, some arrangement for his continuance in the Asylum, stating that he had in vain endeavored to make provision for his care by some of his relatives, although he had several children married and living there, to whom he had offered more pay per week than the cost to the town for his support at the Asylum, but none would accept him, and, his discharge being imperative, he removed him, not knowing what provision would be possible, or at what expense. And yet no more suitable person for outside care, in the judgment of the Supervisors or myself, was at that time in the Asylum.

But even in these apparently most favorable cases, with all the conditions named that may be brought to bear favorably upon this mode of provision, we are confronted with Scottish experience, which shows that in many instances those who by relationship are their natural guardians, are often the most unsuitable for the task. And the placing of the insane in the homes of strangers, rather than with relatives, is increasing year by year in the history of this method of care.

In the consideration of this subject, far be it from me to condemn untried any method of provision. Gradually, in the lapse of years, one conviction has grown upon the community—that the insane, however provided for, must have the safeguard of official responsible oversight. It is this alone that redeems the method we have now considered from one of unqualified retrogression.

An Act of the last Legislative Assembly in Vermont places all the in-

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sane, whether in Asylums, almshouses, or families, within the legitimate range of supervisory authority. This was an advance step; but it needs still to be supplemented by certain enabling acts, to be fully efficient.

The discussion of this subject, be it remembered, is not at this time an abstract one. The problems connected with the future care of the insane cannot be put by for another half-century. The issues involved must ere long engage attention, and only by being alive to them can they be judiciously solved when practically forced upon us. The conclusion, so far as it can now be reached, is that the boarding-out system can be made practicable to but a very limited extent. I am no advocate of any single method of provision. On the contrary, I believe the consideration of the whole question demands the recognition of classes, and so, far as practicable, should reach to individual needs. Under wise oversight, no State need be committed to any single plan, provided the insane are secured from oblivious and irresponsible neglect.

I would urge upon the profession one other consideration of vital consequence, but too often overlooked in the agitation of the general question. The half century past has made great strides in the way of preventive medicine. Humanitarians, in their zeal for a class often ignore the larger interests of the whole. In their efforts for the welfare of the insane, they forget their bearing upon the sane. Under the head of "Morbid Sympathy," (see Asylum Report, 1876), I have before enlarged upon the depressing influence of an insane person upon the sane members of a family. Influence is always reciprocal, whether in families or in communities. If the effect of sane associations is favorable upon an insane person, the obverse is equally true. The subject should be looked at upon both sides. There might not be ordinarily a palpable effect observed where kinship does not exist as a complication, but this intimate relation is particularly to be deplored where consanguinity exists, and a common predisposition obtains, as in such cases the tendency, as it were, is developed with as much certainty as any natural tendency may be under fostering conditions, the insane member infusing by his presence and deranged convictions his delusive ideas insensibly into the minds of those thus unfortunately circumstanced, until in a manner quite involuntarily others are drawn within the charmed circle, and bound by the chain which has thus, link by link been forged.

The records of the Asylum show many instances of duplicate insanity, or of two members of the same family similarly deranged. I recall a

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number of cases of sisters, and one of a mother and daughter, in whom the morbid state in the secondary cases was developed out of association, beyond any reasonable doubt.

In these cases there is usually a stronger and a weaker mind, the latter being the reflection and echo of the former; the ideas, delusions and morbid feelings of the one being identical with those of the other.

Not very seldom do we hear assigned as a reason for bringing an insane person to the Asylum that it is to forestall the danger of having to bring likewise the member who has for a more or less lengthened period taken care of the deranged one, and borne the burden of anxiety until it has become too constant and too wearing to be longer endured.

I do not feel that this consideration can be too strongly emphasized to the profession; and in any plan looking to the care of any class in families, the bearing of association in its influence upon the sane should be given due weight.

LESIONS OF THE CEREBRAL HEMISPHERES.

By WILLIAM T. SMITH, M. D., Hanover, N. H.

The learned Humphrey, writing of the skeleton, calls attention to the fact that the relative length of the lower limb is greater in man than in the apes and monkeys; and that as you compare the superior with the inferior races of mankind the same difference is noticeable. So this member becomes an index of the grade to which the individual belongs, and pride in a well developed leg has a scientific basis.

But it is on the upper region of the frame that most of us rest our sense of superiority. It is Mivart, I think, author of a work on the anatomy of the domestic cat, who claims that this animal, tried by the test of adaptation to environment, is the most complete of organisms; that in the perfection of each function and in the harmonious combination of all to secure the ends of cat life, she is superior to man. This may be true. It is the arching cranium and the prominent brow that signify man's supremacy. The cerebral hemispheres, reaching in him their greatest relative size, are the seat and source of his power.

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The case in which Nature encloses the brain is admirably adapted for its protection. In the adult it is firm, solid and tight. The only large opening into it, the foramen magnum, is guarded by bony processes and deeply covered by muscles. Its exposed portions present in every direction the form best calculated to resist pressure; namely, the arch. Various ridges traversing its surface, as the supra orbital, the temporal, the external occipital crest on the outside, and the frontal crest and the borders of the several sinuses on the inside increase its strength. The diploic layer of spongy tissue, between the external and internal tables serves as a buffer to diminish the effect of blows. Within the cranium the subarachnoid fluid between the investing membranes lessens concussion. The brain is seldom permanently injured by any force which is not sufficient to fracture the skull.

The hemispheres constitute seven-eighths of the encephalon by weight, and occupy the larger part of the cranial cavity. Each is divided into five lobes. The anterior lobe rests in the anterior fossa; the temporo-sphenoidal lobe in the middle fossa. The occipital lobe rests on the tentorium, which covers the cerebellum. The parietal lobe is above the temporo-sphenoidal and between the frontal and occipital. The central lobe or island of Reil is covered by the convolutions of other lobes. These lobes are separated by fissures. The fissure of Sylvius, which marks off the temporo-sphenoidal lobe, is the most distinct. The fissure of Rolando separates the frontal from the parietal lobe. The parieto-occipital fissure is not readily distinguished from other fissures, so that the division between the parietal and occipital lobes seems arbitrary. Each of these lobes contains several convolutions. In the frontal lobe we have the 1st, 2d and 3d frontal and the anterior central; in the parietal lobe the posterior central, the superior parietal, the angular, and the supra marginal; in the temporo-sphenoidal the 1st, 2d and 3d convolutions, and in the occipital also 1st, 2d and 3d.

On the exterior of the skull the anterior inferior angle of the parietal bone lies nearly over the beginning of the Sylvian fissure. The ascending branch of that fissure almost coincides with the line of the coronal suture and the main branch with the line of the squamo-parietal suture. The parieto-occipital fissure lies beneath the apex of the lambdoid suture. Measure back on the sagittal suture forty-five millimetres from the coronal suture, and you reach a point near which the fissure of Rolando begins. This fissure runs downwards and forwards,

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nearly parallel to the coronal suture, but approaching it as it descends.

The hemispheres are composed of gray and white matter. The gray matter contains the cells, and is found chiefly on the surface and in the ganglia at the base—the corpora striata and optic thalami. The white matter is fibrous, and serves to connect the different portions of gray matter together, and the whole with the cord below. An important tract of white fibers is the internal capsule whose anterior portion is continuous with the motor tract of the cord, and originates in the so-called motor convolutions, and whose posterior portion unites the sensory tracts of the cord with the optic thalamus and the posterior convolutions.

The hemispheres are the seat of the higher faculties of the mind. We infer this from the fact that the intelligence of different species of animals corresponds to the development of the hemispheres. We find them relatively small in fishes and reptiles, larger in birds, larger still in mammals, and in man largest of all. When the hemispheres are removed from an animal, the effect is a loss of will, understanding and emotion. He breathes and moves and swallows, but has no intelligence. In cases of congenital deficiency or of disease of the hemispheres in man, similar conditions obtain.

Most physiologists accept the doctrine of cerebral localization—the doctrine, namely, that definite portions of the cortex preside over definite functions. This is taught in the text books. The contrary doctrine—that there is no specialization in the brain cells—that they are all capable of performing all functions, and that the cortex acts as a unit, was the universal belief until recently. In 1870 Fritsch and Hitzig first published their experiments in stimulating and destroying different parts of the brain surface, and the conclusions drawn from them. Since that time an army of investigators has been pursuing the same line of study by various methods. The results claimed are the discovery, 1. That large portions of the brain surface may be stimulated or destroyed without any definite motor or sensory disturbance.

2. That stimulation of the anterior and posterior central convolutions causes contraction of certain groups of muscles. The center for the leg and foot is the upper portion of these convolutions—for the arm and hand the median portion, and for the face and tongue the lower portion.

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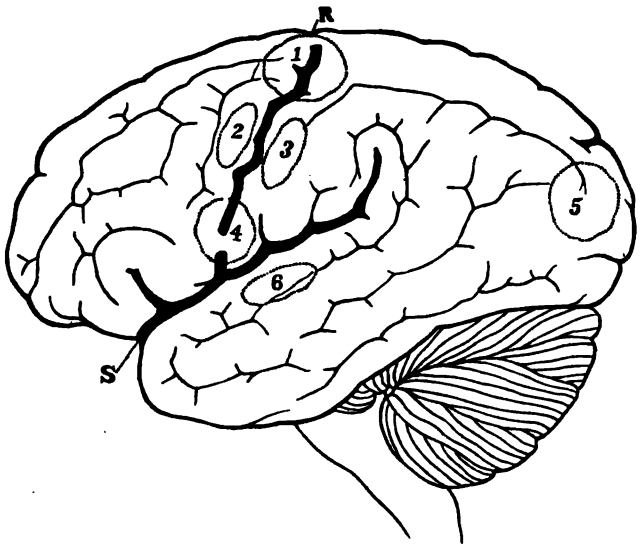

SIDE VIEW OF THE BRAIN SHOWING CORTICAL AREAS.

S. Fissure of Sylvius. R. Fissure of Rolando.

Motor Areas. (*1*) *Leg.* (*2*) *Forearm.* (*3*) *Fingers and Wrist.* (*4*) *Face and Tongue*
Sensory Areas. (*5*) *Vision.* (*6*) *Hearing.*

3. That the posterior extremity of the third frontal convolution presides over the function of speech, perhaps in connection with the island of Reil and the first temporal convolution.

4. That the centre for vision is in the posterior part of the hemisphere.

Other centres are located with less certainty.

The evidence of these assumptions is anatomical, physiological, pathological and clinical.

Anatomical study of the course of the nerve fibers in the nerve centers is very difficult, because no fiber runs far in the same plane. In any given section a fiber can be followed but a short distance before it is cut off. Microscopists have labored with great patience and ingenuity to overcome this difficulty. The nerve fibers in the cord and brain, though various in function and in their central and peripheral connections, are alike in structure and look alike. Obviously, if in any way

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a tract or bundle of nerve fibers could be made to assume a different aspect through its whole length, it could then be distinguished and traced to its termination. This cannot be done by staining. The fibers, being identical in structure, take the same colors. But Waller, an English physician, made a discovery in 1850–52 which brought to notice a method of differentiating nerve tracts.

It is a well known fact that when a nerve is severed it not only ceases to exercise its functions, but actually degenerates and atrophies below the section. Its fibers may or may not be renewed and re-united to the proximal portion. Waller found that when the anterior and posterior roots of a nerve are severed *above the ganglion of the posterior root*, the fibers of the anterior root degenerate below the section, but the fibers of the posterior root degenerate above the section—toward the spinal cord. In the peripheral nerve, therefore, the degenerated motor fibers can be distinguished from the sensory fibers. Other observers have applied this method of differentiating nerve tracts to the spinal cord and the brain. It has been found that after a lesion in these centers, certain tracts degenerate above the lesion (ascending degeneration), and others below the lesion (descending degeneration). Ascending degeneration occurs chiefly in the posterior columns, and descending degeneration chiefly in the anterior and lateral columns. Reasoning from the discovery of Waller, and from their connections, the tracts of ascending degeneration are regarded as sensory and the tracts of descending degeneration as motor. It is claimed that a lesion of the cortex of the brain in the motor centers causes a descending degeneration through the whole length of the motor tract.

To this discovery of Waller was added another by Von Gudden, of Munich, namely, that if a nerve tract be severed or an organ of special sense be removed in a very young animal, atrophy both of the nerve tract and of the centre with which it is connected will ensue.

Flechsig found that in the embryo the fibers of different nerve tracts assume their medullary sheaths at different periods, and if they are examined during this development the tracts can be distinguished by their appearance.

To the proofs of the doctrine of cerebral localization afforded by these means has been added the evidence of many autopsies.

But though cerebral localization seems to be proven, the subject is not altogether clear. Its advocates differ among themselves. With regard to the position of the visual centre, for example, Ferrier places it

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in the angular gyrus and the occipital lobes. Munk locates it in the occipital lobes alone. Ferrier and Charcot have taught that the occipital lobe of each side is connected only with the eye of the opposite side, and that a lesion of one occipital lobe may be followed by total blindness in the opposite eye. Charcot's diagram, illustrating this connection, is given in Dalton's physiology, and his doctrine is therein taught. Munk, and most of the Germans, hold that the occipital lobe of each side is connected with half of each retina, so that a lesion in this part of the brain may cause hemianopia, [half-vision,] but not total blindness of the opposite eye. Again, in the lower animals the paralysis or loss of vision which follow lesions of the motor cortex, or visual centre, are in many cases only transient. After a few days or weeks the functions are restored. Goltz, of Strasburg, who is the most eminent opponent of localization, presented his views at the International Medical Congress in 1881. He exhibited a dog, a large portion of whose cortex, including the motor areas, had been removed. The animal was sluggish and awkward, and manifested a low grade of intelligence, but no paralysis or loss of sensation. Goltz claimed that in all his experiments this was the result. His method at first was to wash away by a forcible stream of water the exposed cortex. Afterwards he removed limited portions by a kind of trephine. His animals exhibited diminished intelligence and blunted sensibility, but no paralysis or anæsthesia. This showed, in his view, that the brain cortex acted as a unit in all its functions. But Ferrier, as the champion of localization, exhibited to the same learned body two monkeys, who assisted in his demonstration. His method was to destroy the cortex by cauterization. One of the monkeys had had his motor area destroyed, and was hemiplegic. The other had been cauterized in the auditory center in the temporo-sphenoidal lobe, and was deaf in the opposite ear. Goltz might have affirmed that Ferrier's monkeys would in time regain their lost faculties. The followers of Ferrier said that in the dog the subordinate centers are more independent of the cortex than in the monkey, who is more like man in his organization, and that by the post-mortem which was held on dog and monkeys it appeared that the motor and sensory areas of the dog were not entirely removed.

It is interesting to note the ingenuity with which the advocates of various theories will explain away the evidence of their opponents. In following such discussions—notably the war over the cholera bacillus—one becomes impressed with the idea that since experts on each

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side are liable to such innumerable errors, there is little chance for non experts to arrive at any satisfactory conclusion. "When Doctors disagree, who shall decide?" But satisfactory conclusions on any subject are seldom reached by argument alone, and are seldom defended by unassailable reasons. Indeed, the greatest discoveries have been made in the face of satisfactory reasons against their possibility. Columbus could easily have been proved a dreamer of improbable dreams, and a distinguished writer showed clearly in a magazine article that it would never be possible for a steam vessel to cross the ocean at the very time when the feat was already almost accomplished. On the other hand, great truths have been frequently missed when, as it seems, a child might have found them. Nieman in 1859, Carus, Fronmüller, Schriff and Aurep noted and recorded certain anæsthetic effects of cocaine. The few more steps which would have led to the great discovery which Köller stumbled upon later, they did not take. We are indebted, not to science, but to empiricism for most of the remedies of our materia medica. Sir Humphrey Davy observed the effects of nitrous oxide gas long before Dr. Wells, the Hartford dentist, introduced it. Many learned men knew the properties of sulphuric ether, but Dr. Morton, a man of inferior mind, won the honor of making the first practical use of it. We are all free citizens of the realm of truth, and her gifts are not confined to the learned.

At present we are warranted in believing:

1. That certain definite areas of the cortex are immediately connected with certain motor and sensory functions.

2. That the motor area covers the anterior and posterior central convolutions; that the speech center is in the neighborhood of the island of Reil; and that the visual center is is in the occipital lobes.

3. That there are subordinate centers, perhaps in the basal ganglia, which may take up the work of the primary centres, and that these subordinate centers are relatively more independent in the lower animals than in the higher.

Experiments on animals and observations of disease in man seem to prove that besides the cells which exercise the functions of sensation and motion, there are associated with them other cells, whose office it is to store up impressions of these sensations and motions. A memory is thus constituted in each region, which is essential to the normal action of that region. For example, Munk and Goltz both found that when a portion of the occipital cortex was removed from dogs and

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monkeys, they seemed to have lost all recognition of objects seen. They would avoid an obstacle in moving about a room, but did not seem to know what the obstacle was. A whip held before their eyes excited no fear. Food and drink did not attract them. But having once tasted food and drink, they would afterwards take it as readily as before. They seemed to be in the condition of the infant who has not learned to appreciate the properties of the objects which he sees. To this condition the term "soul-blindness" has been applied. The cells in which are stored up the images of objects seen in the past are gone, and the object, therefore, when seen awakens no memories or associations. In like manner we might have soul-deafness. In some cases of cerebral lesion the same symptoms have been exhibited in men. Stenger describes a case in which the patient could see a chair which was in his way, but avoided it only after having once stumbled over it. Fire brought close to his eyes did not frighten him. He touched it, to find out what it was, and only then avoided it. He could see wine, but seemed not to know its use until it was brought to his lips. In another case, after a paralytic attack the patient recognized some objects through the sense of vision, while he did not recognize others. Thus, he recognized his bed, fire and bread, but not a needle, shoes or his clothes. But (just as in the case of Munk's dogs) he learned to know a needle from its appearance, after being taught what it was by other senses. In another case reported by Zacher, a paralytic attack left the patient with difficulties of speech, and motor and sensory disturbances, and the same kind of visual symptoms. Though paralytics generally seize food very greedily, this patient left it untouched until put in his mouth. He was very fond of cigars, but he now took one in his hand and again laid it aside, apparently not knowing its use.

Charcot has reported a case in which words written or spoken were not recognized, but by tracing a word with a pen the patient could instantly get its significance. Here the memory of form and sound was defective, but the memory cells connected with the motor area were uninjured.

Other interpretations might doubtless be put upon the facts narrated, but the theory is an interesting one, and worthy of attention.

Passing now to the practical aspect of our subject, we note first that the brain is much more tolerant of injury than we would expect an organ so delicate and important to be. "The times have been," says

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Macbeth, "that when the brains were out the man would die. But now they rise again" Quite possibly we shall soon hear that some German professor is exsecting it. The famous American crowbar case is familiar, and yet for the honor of our section, since it occurred not far away, it should be rehearsed occasionally. The bar in this case was driven into the cranium beneath the zygomatic arch, and came out near the junction of the sagittal and coronal sutures. After a period of coma, the man gradually recovered without loss of motion or sensation, and labored, as an hostler, for a dozen years, until his death from some cause independent of the brain lesion. His skull is in the Harvard museum. The loss of brain substance was in the frontal lobe, which is regarded as the seat of the faculties of comparison, judgment and will. In a laboring man of average intelligence the loss of a degree of these powers might easily be unrecognized. Moreover, many cases prove that for exercise of the higher faculties one hemisphere is sufficient. Probably if we could get at the exact fact, this man was mentally less than before his injury.

Last spring a case was reported from Bellevue Hospital, of a man who had shot himself in the forehead. The bullet entered near the coronal suture and the median line, and passed backward about six inches, until it reached the posterior wall of the vault, an inch or two above the superior angle of the occipital bone. Its course was followed by a probe. It was removed by trephining over it. A drainage tube was drawn through and allowed to remain for some time, and the patient made a good recovery.

At a recent meeting of the Cincinnati Academy of Medicine a case of fracture of the base of the skull was reported, in which a drachm of brain substance was discharged through the ear, and there was a flow of subarachnoid fluid for a week. The patient recovered. The only paralysis which occurred was a facial, lasting a few days after recovery. The brain seemed to be generally less vigorous, but there were no especial defects remaining.

In a German journal a case is related of a hunter who had an iron ramrod shot through his head. It was so firmly fixed that his friends, vainly trying to pull it out, dragged him over the ground. The doctor to whom he was carried drove it out with a hammer. It entered through the occipital bone to the left of the median line, and came out in the right frontal region. The man recovered.

In the American *Journal of Medical Sciences* of January, 1885, Dr.

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Kemper, of Muncie, Indiana, gives the following account: "On the 19th of April, 1884, a farmer boy, eighteen years of age, fired a gun at a squirrel. It burst, and the iron breech pin, an inch and a half long, and in weight 617 grains, was driven through the frontal bone just above the right eyebrow, and buried in the frontal lobe of the brain. In examining the wound the next morning, the doctor passed his finger half an inch beyond the inner plate of the bone before reaching the breech pin. About half a tea-spoonful of brain tissue was found on the leaves at the spot of the accident. The boy lay for a time insensible, but within four hours made his way unaided to his father's house, a mile and a half distant. When first seen by the doctor, six hours after the explosion, he was suffering but little pain, and his mind was clear. He slept well that night, and the breech pin was removed the next morning without an anæsthetic. In fifteen days he was well. No symptoms remained, except a greater sensitiveness to the sun's heat in summer."

In the *Medical Record* of August 22d, 1885, a case is reported of a girl, ten years of age, who was shot in the head by a stray bullet. It entered an inch behind and above the right ear, and was afterward extracted from the right orbit between the inner wall and the globe of the eye. A tea-spoonful of brain tissue issued from the wound. Within a few hours she began to recover consciousness, and her mental faculties were gradually restored. There was no paralysis, and slight headache was complained of for a few days only. In three weeks she was out of doors at play. She had double vision at first, but the eyesight soon became normal, and her faculties were apparently unimpaired.

Drs. Fenger and Lee, of Chicago, in the July number of the *American Journal of Medical Sciences*, report a case of brain abscess treated on the principles which govern the treatment of abscess elsewhere. It was in the frontal lobe. The patient, a policeman, had been wounded in the forehead, and, after apparently recovering, a month after the injury showed alarming symptoms. They trephined the frontal bone, searched for the abscess cavity with an hypodermic needle four inches long, and, having found it, passed the blades of a pair of narrow operating forceps in by the side of the needle, and allowing them to open the pus gushed out—a tea-spoonful. They then inserted a drainage tube, and closed the wound antiseptically. The abscess cavity was regularly washed out, first with a solution of boracic acid, and afterwards with a 2½ per cent. solution of carbolic acid. The drainage tube was

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gradually withdrawn, and in four months from the date of the operation the man resumed his duties as a policeman. Two months later he was sick for ten days and had three epileptic fits, and five months after another. This last was in December, 1883. Since that time he has had no fits, and has been well.

The investigations of cerebral localization are practically valuable chiefly for diagnosis of brain lesions. If we know the center for each nervous manifestation, we can find the lesion in many nervous disturbances. Not in all, for with all that can be proved for localization, the facts remain that the different parts of the brain are most intimately associated by connecting fibers, and a lesion of one center may affect another functionally associated; that a lesion in one region involving an arterial trunk may involve a remote region by cutting off its blood supply; that intra-cranial pressure may affect so many centers that the seat of original injury cannot be determined.

Monoplegias—paralysis limited to groups of muscles—point quite definitely to the motor area of the cortex. The following I quote from a list of cases given by Prof. Starr in the *American Journal of Medical Sciences*:

A CASE OF BRACHIAL MONOPLEGIA.

"A male, aged twenty-six, after a blow on the right side of the head developed paralysis of the extensors of the *left wrist and fingers*, and severe headache, and gradually sank into a state of mental hebetude. Abscess was suspected, and ten weeks after the injury he was trephined. The fenestrum was made over the middle third of the right posterior central convolution. An abscess was found, and two ounces of pus were evacuated, but the patient died.

The autopsy showed that the abscess had undermined the middle third of the posterior central convolution and the convolution just posterior to it, involving both gray and white matter."

ANOTHER CASE OF BRCAHIAL MONOPLEGIA.

"Female, aged sixty, suddenly lost the powers of speech, and of motion in the right arm. Her tongue was partly paralyzed, but face and leg escaped. A second stroke caused death.

The autopsy showed an irregular area of yellow softening ¾ to 1¾ inches in size. This lesion affected chiefly the second and upper part of the third frontal convolutions and the adjacent anterior central convolution and the lower anterior angle of the operculum. The convolutions of the island of Reil were almost effaced."

Cases of paralysis of the leg alone due to *cortical* lesion are rare.

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Starr quotes two cases of crural monoplegia, in which the lesion was limited to the white substance of the brain just beneath the cortex.

A CASE OF ASSOCIATED MONOPLEGIA.

"Male, aged fifty. After an occasional sensation of numbness in the left foot, lost sensation suddenly in the entire left leg, and had a severe spasm of the leg which extended upwards and involved the arm. From this attack he recovered completely. He had three such attacks at intervals of three months. Then he became completely paralyzed in the left leg and arm. The face was unaffected. Then convulsions on the left side came on. Then general convulsions, headache, coma, and death.

On autopsy, an ovoid tumor measuring from one and a half to two inches was found in the right hemisphere. It involved the paracentral lobule, its gray and white matter, and the upper half of the anterior central and posterior part of the first frontal convolutions."

These cases are samples of a hundred collected by Prof. Starr which point to a definite location of motor and sensory areas in the cortex. With reference to the motor area they show that when the face was affected alone, the lesion was in the lower third of the central convolutions. When the face and arm were affected, the lower and middle thirds were involved. When the leg and arm were affected, the upper and middle thirds were involved. The face and arm and the leg and arm were affected together, but never the face and leg without the arm. These pathological conditions corroborate the conclusions of physiologists.

Within the past year a London surgeon, Dr. Hughes Bennett, guided by the doctrine of localization, has successfully diagnosticated and removed a tumor of the brain. The patient was a farmer, aged twenty-five, who had been suffering for three years with circumscribed spasms and paralysis. Twitchings in the left side of the face and tongue were the first symptoms. Later twitchings of the left arm began. Still later the arm became paralyzed and the leg began to twitch. Dr. Bennett made the diagnosis of a tumor near the upper third of the fissure of Rolando, involving the cortex. On trephining over this region, a glioma as large as a walnut was found in the anterior central convolution, about ¼ of an inch below the surface. It was removed. The patient was relieved at once of some of his worst symptoms. He died, however, forty days after the operation.

The history of brain surgery does not show many examples of success. It is usually a last resort against desperate odds. The labors

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of the physiologist and the pathologist are giving us a hope of better results in the future.

THE CAUSES OF OUR COMMONEST INFECTIOUS DISEASES, AND POPULAR METHODS OF PREVENTING THEM.

By Charles S. Caverly, M. D., Rutland, Vt.

THE VICE PRESIDENT'S ADDRESS, TO WHICH THE WOMAN'S CHRISTIAN TEMPERANCE UNION AND THE PUBLIC GENERALLY WERE INVITED TO LISTEN.

When asked to address at this time a popular as well as a professional audience, I hesitated long before consenting, because of two apparent difficulties. One, that I may not enter into scientific details sufficiently to satisfy my professional brethren; the other, that I may not sufficiently prune my language of technicalities to interest the "laity," so-called. But I beg the indulgence of my brother doctors, while I speak of a few every-day ailments in every-day language; and I assure the rest of this audience that I undertake to serve up for them some very plain truths, knowing full well the difficulty of rendering a professional, especially a medical, dish palatable to the average human being.

I recognize the opportunity for saying something on this occasion which, however uninteresting it may prove, may perchance be sometime serviceable in protecting your homes from the disaster of disease.

It is easy to criticise, and I imagine the members of this Society are tired of criticising the apathy which marks this State in taking action on sanitary matters,

But it is a palpable fact that Vermont is behind her sister States in enacting sanitary laws. She has a statute intended to check the spread of small pox, and a worthless law regulating the practice of medicine. But we find on the statute books of the State nothing whatever directed against the ravages of other contagious diseases, and we have no Board of Health, in whose hands such matters could be trusted. Surely this State should be a paradise for doctors.

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In view of this deplorable negligence on the part of our legislators, it behooves the public generally to resolve itself into a "committee of the whole," and know the nature of our commonest and most fatal diseases, and be able to act intelligently in stopping their spread. I ask you to consider with me the causes of some of the ordinary infectious diseases which prevail very generally in our State, and measures which any one may adopt to prevent them. With accumulated experience and improved methods of investigation, the theories of the causes of typhoid fever, diphtheria, consumption and other diseases, have undergone a complete revolution within a very few years. Diseases which were once thought contagious are now known to be so only under certain important conditions, and others which were considered innocuous are now known to be highly contagious.

Last winter a person visiting a distant city contracted disease, and returning to his home, a small town in the interior, had typhoid fever. His house was situated on the banks of a stream which supplied drinking water to a large part of the village. The result was several hundred cases of the fever among those drinking this water. Those families having wells of their own did not contract the disease unless the water in these wells became poisoned in the same way. This was the origin of the mysterious epidemic which has prevailed the past spring at Plymouth, Pa., with which you are all familiar.

Two families having their houses full of children suffered from successive attacks of diphtheria. They had never had the disease until they employed a seamstress, who came from a distant part of the same city. Attacks of the disease followed each other in quick succession. Sewers and sewer-traps were examined, and the plumbing changed from cellar to garret. Still the attacks of diphtheria persisted. There was diphtheria in the family from which the seamstress came. She was suspected of bringing the disease and was dismissed, and with her diphtheria disappeared from these families. (*New York Medical Journal*, volume 40, page 346.)

A family consisting of father, mother and six sons and two daughters gave no family history of lung trouble, and were strong and healthy. One son, who was married, contracted consumption and was taken home to be nursed. He slept for a time with another brother, and was nursed by the two sisters. First one of the sisters, then the other sister and the brother who had slept with him contracted the disease and died. The remaining four brothers, who were little in con-

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tact with the one who first had the disease, remained strong and well. (*British Medical Journal*, No. 1,205, page 219.)

Here are three typical instances of the dangers to which I wish to draw your attention, each one disastrous because of negligence or ignorance. Any one in this audience can probably cite parallel cases. They occur constantly, even in our sparsely settled Green Mountain State, with its fresh air and pure water. Every father, every mother, every man or woman who presides over a household should become acquainted with the nature of these diseases, and in emergency be able to cope with them intelligently. A leading paper of this State, in commenting on this subject recently, says: "Ignorance and indifference are responsible for a large proportion of the deaths that are caused by typhoid fever, by diphtheria, and scarlet fever, and other diseases that seem to be the retribution that follows gross violation of the laws of health."

So much has been written and spoken of late about the deleterious effects of the gases of sewers and vaults, that many suppose that disease in any form has that origin. People spend their time testing traps and peering into vaults and sink-holes, while they drink the seeds of typhoid or swallow them with their dinners, while the nurse with a sore throat that she little thinks is diphtheria is tending the children, or the consumptive is shut up with his attendant, who is slowly, but pretty surely inhaling the poisons of the disease. Far be it from me to underestimate the harmful effects of sewer gases, but that these are made the scapegoat to account for many diseases of which they are entirely innocent, is patent to every physician. The dire effects of breathing these gases has been so magnified by popular writers on this subject, that in their anxiety about them, people forget that there are other sources of danger in the household.

Typhoid fever is a disease which I might almost characterize as a disgrace to civilization. It owes its existence to filth; it owes its spread to filthy habits. The poison of this disease does not arise from sewers or cesspools or marshy lands, spontaneously. It comes from another case. It probably owes its propagation to other cases, just as surely as does scarlet fever or small-pox. The characteristic lesion of typhoid fever is in the small intestines. Here the poison takes root, and from hence it goes to its next victim. It matters not what this poison is, it must find its way into the alimentary canal before it can cause the disease, and from the alimentary canal it goes to

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propagate it in others. There are many ways in which the poison makes its progress from one to another. The excrementa of a case are thrown into a drain, or cesspool, or even upon the surface of the ground, whence they are carried by rain water into the neighboring well or spring. They may be thrown upon the snow or lie frozen in drains in winter, and the poison may remain dormant until the warmth of Spring or Summer revives its vitality. This was the case with the Plymouth epidemic which I have cited. In these and many other ways the poison of this disease may get into drinking water. The same water helps to make the food and the person who washes the soiled linen of a patient, or nurses him, may poison the dinner of a family in preparing it.

The cases in which typhoid fever is communicated from person to person by food and drinking water have multiplied until nearly every physician admits the correctness of this theory. It enters families, and one by one the brothers, sisters, servants or children sicken, and each case may become the focus of a new epidemic in a distant family or neighborhood.

As a final statement in regard to the cause of typhoid fever, let me quote from Dr. Budd's monograph on the subject. He says that cases "never occur except under one condition, that is to say, when no sufficient provisions have been made for preventing the discharges from the human intestine from contaminating the soil or air of the inhabited area." (W. Budd, M. D., F. R. S. Typhoid Fever, page 38.)

Diphtheria is a contagious disease. The best microscopists now agree that diphtheria, like most of the so-called infectious diseases, is a parasitic disease. Two species of microbe are found in the diphtheritic deposit. One of these is the chained micrococcus, the other a rod-shaped microbe or bacillus. The exact method of infection cannot be positively stated. This, however, can be said with certainty: The disease can be communicated from the sick to the well who are in the same room. Upon this point the best authorities are a unit. Whether the vehicle of the poison is expired air of the sick, the sputum, or other emanations of the sick person's body, is not fully determined.

It has been fashionable to hold Sewers, Cesspools, & Co., responsible for much of the diphtheria in the world. Bad drainage, foul air, and decomposing animal and vegetable matter are unhealthy, but it is questionable if alone they have ever caused a case of diphtheria. Jacobi quotes Tripe, Railton, Bailey, and others who have written in support

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of the sewer-gas theory of its origin. He says for himself that he has "not been convinced, however, that diphtheria can be considered a sewer-gas disease." (System of Medicine, Pepper, volume I, page 682.) This is not the occasion to enter upon a full discussion of the cause of this mysterious disease.

I cannot do better than to quote again Dr. Jacobi, than whom probably no doctor has seen more of diphtheria. He says, "There is as much diphtheria out of bed as in bed, nearly as much out of doors as indoors." And again, "There is probably no spontaneous origin of diphtheria any more than there is a spontaneous origin of cholera or scarlatina. Diphtheria is contagious. Severe forms may beget severe or mild forms. Mild cases may beget mild or severe cases. What has been called follicular tonsillitis is mostly diphtheria." (*New York Medical Journal*, volume 40, page 347.) An utterance so positive as this, coming from so high authority, ought to create a profound impression on professional and non-professional minds alike, on every one who is liable to fall a victim to this dread disease.

Consumption is a disease whose cause is better understood now than ever before. Theories in regard to it have undergone a complete revolution within the past three years. It is unnecessary for me to enter into the bacillar theory of the origin of this disease, for which the profession and all the world are indebted to Dr. Robert Koch. Suffice it to say that the cause of this disease is a parasite, called a bacillus. It sets up a process in the lungs and other organs which results in the deposition of tubercle. This bacillus is found in the expired air of a consumptive, and in all the emanations of his body. The air of the sick room may contain it. It sets up the disease in others inhaling this air, who furnish the proper soil for its growth. The proper soil is furnished, of course, by those of a debilitated or weak constitution; by those who from heredity or debility are said to be predisposed to the disease. Thus brothers, sisters, those who are constituted most like the consumptive, fall an easy prey to the disease; likewise those who are shut up indoors, who lack fresh air and exercise, when allowed to associate with the sick person. Whether consumption is a purely contagious disease, as is diphtheria, cannot now be positively asserted. But such a theory would cause less surprise in the profession than a similar one in regard to diphtheria or typhoid would have done to our predecessors of twenty years ago.

I have given you in substance the theories of the cause of three of

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our most common and fatal diseases. They are more than theories. They have each one borne the test of experiment and experience, on both sides of the Atlantic. Those who have tested them and who now advocate them, represent the foremost ranks of the profession. They are men whose skill and integrity are above question. I might speak further of the causes of scarlet fever, of measles, of small-pox. But the contagiousness of these every one recognizes.

Allow me, however, in passing, to refer to one other disease which has been rampant in southern Europe the past two years, and which is now the nightmare of our local Boards of Health. I refer to Asiatic cholera. Here, again, mankind owes a debt of gratitude to that persevering, pains-taking German, Koch. Although the explanations he gives of the cause of cholera may still be fairly questioned, yet he has maintained his ground so far against all adverse criticisms, and it seems not unlikely that his conclusions will ultimately prove to be correct. Dr. Koch, after careful investigation of the disease in Egypt and France, found a bacterium which he at first classed with the bacilli, afterward with the spirillae, to which he attributed the cause of the disease. This microbe was curved, or comma-shaped. It made its way from patient to patient, in much the same way as the specific poison of typhoid fever. Its vehicle was food and drink, and, like typhoid, it flourished best where the drainage was insufficient and the water supply scanty. Cholera does not arise spontaneously in isolated spots. It travels along the lines of human traffic, in the caravans of the Orient, and merchant and transport vessels of the west. Its perennial home is a small area at the delta of the Ganges. Hence it radiates along the avenues of human intercourse. Two years ago it might have been traced to Egypt. Hence it took its way to France and Italy, and from these centres it may be carried to other countries yet more remote from its origin. If it ever reaches Vermont, it will be by means of some of our seaports, and in the direct channels of human intercourse.

Whatever they be that are the essential poisons of these diseases, be they bacteria, cells, shreds of tissue, spores, their spread is facilitated by defective drainage and scanty water supply. This is the exact relation sewers and and water-pipes bear to these diseases. *They serve as carriers of the poison. They do not generate it.*

All that I have said of the etiology or cause of these diseases may be briefly stated thus: typhoid fever, diphtheria, consumption, chol-

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era, etc., are contagious. The contagium or specific poison of each emanates from the sick person's body, and suspended in food or drink reaches the stomach, or in atmospheric air reaches the air passages or lungs of those who are well, to produce the disease.

Let me now call your attention to the important and practical part of my theme, viz.: measures which any one may adopt to prevent the spread of these diseases, measures which, when they shall have been universally adopted, will utterly crush them out.

The first precaution which should be taken is to *isolate* the person sick with any of these diseases. Every one now recognizes the importance of keeping a patient sick with small-pox or scarlet fever apart from those who have never had the disease. Exactly the same precaution should be practiced with those sick of any of the diseases we have discussed. The poison of typhoid fever, diphtheria and consumption may be taken into healthy organisms from the air of the sick room. That of typhoid fever may in a dry state remain suspended in atmospheric air, whence it may enter the air passages in inhalation. It may remain attached to the walls of the throat of the one inhaling it, and thence, being washed into the stomach, reproduce the disease. The poison of diphtheria is exhaled in the air from the throats of those who have diphtheria, and the specific poison of consumption is demonstrated in the exhalations of those sick with that disease. Thus it will be seen that the atmospheric air of the sick room is itself the vehicle of the poisons of these diseases. It is not possible to completely isolate such patients. They must have nurses, and the friends of the sick one must see him occasionally. The nurses of the sick with typhoid fever must be selected from those who have had the disease, as in scarlet fever, etc.; while in diphtheria and consumption, since one attack does not furnish exemption from a second, but, on the contrary renders the person still more liable to a second attack, attendants on such patients should be taken from the strong and well, from those who have never shown any predisposition to these diseases. In all cases of diphtheria and in all cases of suspicious sore throat, keep all children away from the sick. As is well known, this disease shows a preference for children, somewhat like scarlet fever. No one should, for any length of time, breathe the air in close proximity to the mouth of a diphtheritic patient. In cases of consumption, a strict quarantine should be kept up against the near relatives of the sick person. This may sound rather inhuman, but it is the only safe way. Attendants on the con-

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sumptive should be changed frequently, and should be strong and healthy, especially free from all predisposition to lung disease. The near relatives of a consumptive, those who are of much the same constitution as he, are more liable to contract the disease, from constant association with him, as is well known to most people. Always adopt the common sense practice of strictly isolating such a patient, and thus save a wife, sister, children, from the clutches of this insidious enemy of our age.

First, then, and most important of the precautions I would insist on in the management of these diseases, is isolation. It is not necessary, of course, to establish pest-houses for all such patients, and exile them from the world and all its comforts, though I doubt not some such course would soon render either of these diseases as rare as small-pox. But be guided by sound sense and a practical knowledge of the workings of these diseases, and show consideration for the well before they contract the disease by contact.

The second precaution which should be observed, in the care of those who have these diseases, is *disinfection*. Thoroughly and repeatedly disinfect all the discharges of the sick, as well as all articles of clothing and the sick-bed; in fine, the room and the patient. A disinfectant, for our purposes, may be defined as a germicide. Strictly, it is any agent which prevents infection. It is used in infectious diseases to render inert the poisons peculiar to each. The list of disinfectants is a long one. I will now mention but three. The first of these and most important is *heat*. Anything you would thoroughly disinfect, burn up; or subject, in ovens or by means of boiling water, to a high temperature. Koch's experiments with the cholera poison show that heat is the only practical germicide for this germ. One of the best disinfectants we can use in the sick room, to destroy the germs of the atmosphere, is *bromine* in solution. The profession owes its knowledge of this germicide to a member of this society, Dr. M. Goldsmith, more than to any other one man. Bromine in solution should be allowed to stand in shallow basins about the sick room, the precaution being observed of removing all metals from the room, which it would attack with its fumes. The third and last disinfectant I would mention is *mercuric chloride, corrosive sublimate*. This, in strengths varying from 1:500 to 1:5000 parts of water, is a most efficient germ killer, and may be prepared by the pailful, at a merely nominal cost. Such a solution furnishes a good disinfectant for the clothing and discharges of the

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sick. These three disinfectants, heat, bromine and corrosive sublimate, are the cheapest and most potent we can employ. Every physician has some favorite germicide which he has adopted after practical experience with many. There are many patent preparations which have gained popular favor, which have little to commend them except their disgusting odors. The simple enumeration of these would occupy much time. The three which I have mentioned have the merit of being inexpensive and can, therefore, be used very freely; and with them, by the aid of intelligent assistants, a physician can cope successfully with any of our worst diseases.

With patients sick with typhoid fever the practice of disinfection must be religiously adhered to. All the discharges should be either burned or treated with some strong disinfectant before being thrown into the sewers. Every piece of linen from the bed should be immediately immersed in boiling water or a strong disinfectant solution, and the body bathed in such a solution daily. Let me quote from Freidrich Leffler in regard to diphtheria. He says in substance, "The diphtheritic process is essentially local at first. The general disease is developed from the original seat of attack. Hence the paramount necessity of isolation and disinfection of all discharges from the air passages." (*London Medical Times*, No. 1,771, page 779.) In consumption strict disinfection should be followed with reference to the matter expectorated from the throat and lungs. In fact, as a general rule to which I know no exception, thoroughly disinfect everything that emanates from the person of the sick with any contagious or infectious disease. The third and last measure which I wish to mention, and which might properly be classed with the disinfectants, is *ventilation*.

It is a fact well known to every physician that a patient sick with any of the infectious diseases does best in apartments through which the air has full sweep. Nurses and attendants are afraid the patient will take cold, but there is very little danger of this, so little that it is insignificant beside the danger that they may not have enough fresh air. Dr. Loomis notes the fact that small-pox patients in barracks, which were so open that the snow drifted in in winter, did better than those in the hospital. Fresh air does good by its disinfecting properties, as well as by the life-giving oxygen it furnishes for the patient's lungs. The cheapest, readiest and most efficient medicine and disinfectant we possess is pure air.

No one is without sad practical experience with some of these dis-

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eases. They rear their ghastly forms at the most unexpected times, in the most unexpected places. The chain of contagium may seem to lack a link sometimes, but whenever an epidemic is thoroughly investigated, it will be found capable of explanation on this basis. But however mysteriously they may appear, do not look resignedly on them as partaking of the supernatural, as visitations of Providence. Do not allow superstitious fear to palsy intelligence and common sense. Treat them as your deadliest foes, as enemies that cannot be trifled with. Take at once active measures of suppression, and remember these three cardinal points, isolation, disinfection, and ventilation. Each is efficient alone, but not sufficient. They should all be remembered and practiced. Every doctor should bear in mind these points, the most important part of his treatment, for he has only one duty higher than saving the sick, and that is, protecting the well. Every man and woman should be ready to rigidly enforce them, as they dread the spread of these diseases.

In speaking of the causes of some of these diseases, I am well aware I have stepped upon ground that has always been considered debatable. Theories which I have given of their causes are in accord with the best authorities of the day. They commend themselves to common sense. They tally with the practical experience of every physician.

In speaking of the nature of these diseases, I have been as brief and exact as possible. My views are not mine, but the opinions of the best pathologists and microscopists of the day. I might enter into details more minutely, to speak of the specific microbe of typhoid fever, or of consumption, how it may be recognized and cultivated; in what tissues it is found and how it works its mischief.

Every doctor can study these details in any medical journal, and they are questions which interest few but doctors. The practical bearings of all these minutiæ are what we wish at this time.

Measures which might be adopted for preventing these diseases which I have mentioned are likewise legion, but the main indications and important starting-points are all I have tried to state.

The medical profession of Vermont has a duty to perform, in sanitary matters, which might be performed by a Board of Health. This duty consists largely in teaching the public the nature of these diseases and how to prevent their spread. The people at large, under the lead of the well-to-do and intelligent, should seek to enforce the sanitary laws

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which nature and common sense suggest, even though they be not statutory.

The importance of this subject need not be emphasized; every one who thinks will recognize it. Dr. A. L. Loomis, in speaking of typhus fever, uses this language. "Writers upon this subject usually consider its treatment under two heads, the preventive and the curative. I prefer to use the terms prophylactic and remedial or medicinal, for I question our ability to *cure* disease." He goes on to say that physicians "can do much to prevent the development of many diseases," and that "this will constitute an important part of the active labor of our profession." (Loomis on Fevers, page 244.) It is an open secret that the doctor does not cure any of the diseases under consideration. When once developed, they are self-limiting and cannot be curtailed.

Every doctor must feel his helplessness in the presence of an epidemic of scarlet fever, typhoid fever or cholera, when any of these diseases has gained a foothold in a community. He may make his daily rounds, noting symptoms and prescribing for the relief of this or that one, but he must confess his powerlessness to cure.

The skill and learning of the profession can make themselves felt, in nipping an incipient epidemic in the bud, and in completely warding off impending disease. But this can be done only by organized labor.

Steady nerves of eye and hand, and patient application, together with improved microscopic technique, have placed the weapons in our hands. The strength of the profession can make itself felt in *preventing* disease. Its weakness becomes manifest in its efforts to *cure*.

I have heard that physicians in some parts of China are paid by their patrons while they are kept in good health, but when any one of them is sick, the physician pays him at the same rate until he is again well. Some such rule among the physicians of our community would stimulate us to take greater precautions against the spread of infectious diseases; to take advantage of the ounce of prevention which in the case of these diseases is worth many pounds of cure. Yet I do not think Vermont physicians are wholly or chiefly to blame that the State is so backward in sanitary matters. Any one who would suggest legislation on this subject must always meet that old-fashioned spirit of false economy which suspects every one who would sacrifice a dollar of the public money, of jobbery.

It is the Vermont public who should be interested in preventing these diseases, rather than the doctors of the State. It is the public whose

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homes are desolated by these diseases; the doctors are alone benefited by their spread. Yet I am sure I can bespeak the hearty coöperation of the profession in all measures which may be taken for their suppression.

Let me hope I have gained the public ear sufficiently to at least interest all good citizens in this subject. If you are not fully convinced of the magnitude of the danger or the possibility of protection, let me urge you to investigate the subject intelligently and honestly. I do not appeal to sentiment or emotion, I only ask you to apply the same reason on this subject which you do to other matters of public policy, in which every individual is interested. As you become convinced, help in creating that healthy public sentiment in these matters, which will enhance the public health.

You can do much, perhaps, by advocating legislative protection and assistance; you can certainly do more by enforcing, as opportunity offers, the simple laws which modern science has shown, to govern the spread of our commonest infectious diseases.

ADVANCES IN ANATOMY, PHYSIOLOGY AND HISTOLOGY.

By O. W. SHERWIN, M. D., Woodstock, Vt.

While the columns of the medical journals of past years show the usual signs of medical progress, but little seems to be recorded in the departments of anatomy, physiology and histology. Such as have come under my observation I present to you.

ANATOMY AND PHYSIOLOGY OF THE TONSILS.

At the meeting of the New York Academy of Medicine, October 2d, 1884, Dr. J. H. Bosworth read a paper on the above subject. He points out that the normal tonsil is not an "almond shaped organ," nor is it an organ at all in the sense that the liver and spleen are organs. In the healthy state they can hardly be seen. He states that the whole function of the so-called tonsils is to secrete mucus. He says that "quinsy" is not a disease of the tonsils, but of the connective tissue beneath.

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Dr. Douglas, who was present at the meeting, stated that he believed Dr. Bosworth was correct in his statements that the tonsils ought not to appear at all to the eye, in the healthy throat.

ORGANS OF NECK IN ROTATION OF HEAD.

Dr. Thomas Dwight has demonstrated on frozen subjects that in rotation of the head the thyroid and cricoid cartilages rotate as well as the os hyoides; also that the trachea was much curved to one side.

His frozen sections also showed that the œsophagus was not the flattened tube, with internal surfaces lying in contact, which it has heretofore been represented, but that it was nearly round, and had a certain lumen.

He also says of the chest that the point of clinical interest is that the fissure separating the superior tubes gets to the bottom of the lung before it gets to the front of it, explaining how we may have resonance in front in spite of the presence of consolidation of the lower lobe.

LUNG WITH FOUR LOBES.

Dr. W. A. Edwards read a paper before the Pathological Society of Philadelphia, containing a description of lungs, where the right had four lobes.

COLORLESS URIC ACID CRYSTALS.

Dr. F. W. Ellis reports in the *Boston Medical Journal*, April 23, 1885, that he found small prisms of uric acid which were absolutely without color. They were proved to be uric acid by chemical analysis.

NEITHER PHYSIOLOGICAL NOR PATHOLOGICAL, BUT INSTRUCTIVE.

The *Archives of Ophthalmology* gives an incident at one of the Baltimore medical societies. A suspicious looking mass was found blocking up the posterior nares. It was removed and subjected to a microscopical examination. An animated discussion followed, which was suddenly cut short by the announcement that the so-called neoplasm was an oyster. It had become lodged there during a spell of vomiting.

ABSORPTION OF SUGAR AND ALBUMINOIDS BY THE STOMACH.

In the communication from the Leipzig Physiological Institute is given the results of fifty-four experiments on frogs, to determine the absorption of sugar and albuminoids by the stomach. These experi-

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ments were carried on by Prof. Robert Meade Smith, of the University of Pennsylvania. Part of the studies were made in Leipzig, the remainder in Philadelphia.

The pylorus of fasting frogs was ligated and matters introduced through the œsophagus. Analysis of stomachs of a large number of fasting frogs was made, to ascertain the average amount and composition of contents, at the end of different periods of fasting. Thus was established a basis for calculation.

From his experiments he finds that in the stomach of the frog absorption of sugar takes place readily, and that albuminoids are also absorbed, but not as completely, and require a longer time.

CORPUS CALLOSUM OF THE HUMAN BRAIN.

Prof. J. D. Hamilton, in the *Journal of Anatomy and Physiology*, gives the results of several years' work on the corpus callosum.

Prof. Dwight, of Boston, says he believes Hamilton's observations will be confirmed. The cardinal point which Prof. Hamilton makes demolishes what has been accepted as one of the best established facts in cerebral anatomy, namely, that the corpus callosum is a commissure, connecting corresponding parts of the cerebral hemispheres.

Prof. Hamilton does not believe that there are any commissural fibers in the corpus callosum, but that it is a decussation in which the fibers from the gray matter of one hemisphere cross those from the other, and run into the inner and outer capsules of the opposite side.

WHAT BECOMES OF THE RUPTURED HYMEN?

A medico-legal case gave rise to the question: How long will it take the remains of the ruptured hymen to shrink away, or to become partially absorbed?

A post mortem examination twenty days after alleged rupture by sexual intercourse showed no visible change in the structure of the hymen. The two portions, on being brought together, apparently produced a perfect restoration of the organ, if such it may be called.

The question was asked as to the length of time that would be required to produce a change. At the August meeting of the White River Medical Association, Prof. Mundé, of Dartmouth Medical College, gave an interesting discourse on the subject, the substance of which is that the ruptured hymen in women who have never borne children *never shrinks or absorbs*. The parts can always be found, and

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by bringing them into apposition the former size and shape can be fully restored. On the other hand, in women who have borne children such injury is done to the fourchette that the hymen nearly or quite disappears. This he thinks usually takes place by ulceration. The caruncular myrtiformes is what remains of the hymen and fourchette.

A few days after the meeting I took occasion to observe the hymen in a woman in labor, with her first child. She had been married nearly two years. I readily found the two parts of the hymen, brought them together, forming a perfect hymen in all its parts, and doubtless a perfect restoration of its former shape. There was no absorption of the angles, no shrinkage observable in any part.

This question may have a moral as well as legal bearing. We have been taught that the absence of the hymen is not a certain sign of the loss of virginity, as it is in many cases congenitally absent; whereas, with our present knowledge, we shall expect to be able to determine with certainty, in a given case, whether a hymen ever existed.

Considerable has been done in pathological histology, but the work is mostly of a character that is of no especial interest to us as general practitioners.

Several new methods of staining the bacilli of tuberculosis have been proposed, but none seem to stand the test as well as Ehrlich's, with Koch's modification.

After some experience in staining, one may omit the blue as a contrast color. In my own work I use only the fuchsin. For diagnostic purposes an hour's staining will answer, provided heat be used, but for the best slides the preparation should remain in the dye twenty-four hours.

ADVANCES IN SURGICAL SCIENCE.

Of course it won't be expected that I shall say anything especially new upon the subject named; only present a sort of resumé of what has already transpired. Time and space preclude an exhaustive report in the great domain of operative surgery.

International application and ambition render the aggregate exceedingly voluminous. It is, however, a lamentable fact that reports of

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minor surgery, the management of fractures and dislocations, the after-treatment in amputations such as come within the sphere of the average surgeon, are seldom made; operations suited to hospital practice being those usually given.

BRAIN.

Dr. John B. Roberts, of Philadelphia, advances the following views, among many others, upon operative surgery of the human brain:

I. The complexus of symptoms called "compression of the brain," is not due so much to displacing pressure exerted on the brain substance, as it is to some form or degree of intra-cranial inflammation.

II. A closed simple fracture of the cranium, with the improved methods of treatment, is attended with but little risk to life when made compound by incision of the scalp.

III. Portions of the cranium may be removed, if properly done, with as little risk to life as the amputation of a finger.

IV. In a large majority of cranial fractures the inner table is more extensively splintered than the outer table.

V. Perforation of the cranium is to be adopted as an exploratory measure almost as often as it is demanded for therapeutic reasons.

VI. In wounds of the brain drainage is more important than in wounds of other structures.

VII. Many regions of the cerebral hemispheres of man may be incised and excised with impunity.

VIII. Any accidental or operative injuries should be treated the same as in other localities.

IX. The results of the study of cerebral localization are more necessary to the conscientious surgeon than to the neurologist.

These principles of the operative surgery of the brain were then applied to the treatment of Cranial Fractures.

Closed (simple) fissured fractures.

1. No evident depression; no brain symptoms—no operation.

2. No evident depression, with brain symptoms—incise scalp and trephine.

3. With evident depression, no brain symptoms—incise scalp and possibly trephine.

4. With evident depression, with brain symytoms—incise scalp and trephine.

Closed (simple) comminuted fractures.

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5. . No evident depression, no brain symptoms—incise scalp and probably trephine.

6. No evident depression, with brain symptoms—incise scalp and trephine.

7. With evident depression, no brain symptoms—incise scalp and trephine.

8. With evident depression, with brain symptoms—incise scalp and trephine.

Open (compound) fissured fractures.

9. No evident depression, no brain symptoms—no operation but treat wound.

10. No evident depression, with brain symptoms—trephine.

11. With evident depression, no brain symptoms—possibly trephine.

12. With evident depression, with brain symptoms—trephine.

Open compound comminuted fractures.

13. No evident depression, no brain symptoms—probably trephine.

14. No evident depression, no brain symptoms—trephine.

15. With evident depression, no brain symptoms—trephine.

16. With evident depression, with brain symptoms—trephine.

Punctured and gunshot wounds.

17. In all cases and under all circumstances trephine.

In intra-cranial hemorrhage.

In intra-cranial suppuration, trephine.

Cerebral tumors should be localized if possible, bone removed and growth excised.

Dr. Hunter McGuire concludes that the adoption of such rules would carry us back one hundred years, and thinks that no positive rules can be laid down for treatment of injuries to the skull. Drs. Moses Gunn, of Chicago, and Charles T. Parks agree with Dr. McGuire. Drs. Charles B. Nancrede and S. W. Gross, of Philadelphia, Washington T. Peck, of Iowa, and David Prince, of Illinois, coincide substantially with Dr. Roberts, and think that with the present use of antiseptics, trephining can be classed among the safest of operations. Statistics show that the comparative risk of amputations and trephining are in favor of the latter; the risks of trephining are three per cent., while the risks in amputations of the metacarpal bones is four and five tenths per cent. For my own part, of course with limited experience, I am ready to admit that culpable neglect can too often be laid at my door in the treatment of injuries of the skull. Conservative treatment

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is the easier mode, and is the one more often adopted by the average surgeon. It is our duty, however, and should be maintained whenever under discussion, to go boldly down upon the parts and remove every offending substance; and this should be done immediately, before any extensive inflammatory action is induced.

NECK.

Dr. Joseph Rotter on operative treatment of goitre mentions the importance of obtaining some precise and reliable indication for a procedure so difficult and dangerous. He holds that the thyroid body should be removed under any of the following conditions:

Attacks of extreme dyspnoea, where it renders the patient incapable of any active exertion; also, where it interferes with deglutition. Advanced age is no contra indication of the operation.

The subjects of excision of the thyroid body become cretins, not because the gland has been extirpated, but because they remain in districts where goitre is endemic.

CHEST.

Some interesting cases of resection of the sternum have been reported. One case by Leon LeFort, in which four inches of the sternum was removed, and it was believed that the result would have been favorable had the patient taken food. Having become tired of life, he submitted to the operation, hoping that he would die in it. He died of inanition. Some remarkable cases of wounds of the heart, with extraordinary results, are also reported.

E. Rose, in an article on heart tamponade, contributes twenty cases, sixteen of which were treated by him. Only one was really killed by the wound. Heart wounds are easily diagnosticated from wounds of the left lung, as the symptoms of pneumopericardium are striking. A great source of danger in wounds of the heart is sudden distension of the pericardium with blood. Opening of the pericardium is recommended. Hegar of Hamburg says Rose has not performed this operation which he recommends. Venesection is well spoken of, and a case reported to substantiate it. The pulse could not be felt; there was extreme cyanosis, and cardiac dullness.

Rose bled profusely; the pulse became better and suffocation abated. The hæmopericardium was rapidly absorbed and recovery permanent.

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In all these cases exceedingly prompt action on the part of the surgeon is demanded.

ABDOMEN.

In the region of the abdominal cavity some interesting operations have been performed. Mr. Henry Morris reports a case in which lumbar nephrectomy was performed with favorable results.

In comparing lumbar and peritoneal methods of nephrectomy it has been shown that arguments in favor of the peritoneal operation were more theoretical than practical. The conclusions arrived at are that lumbar nephrectomy, as a rule, is the better operation. Gunshot wounds of the abdomen are no longer to be treated on the expectant plan, but the surgeon is required to at once open the cavity, repair all wounds of the intestines, arrest hemorrhage, remove all foreign substances and proceed as in operations for the removal of tumors, etc. Flattering results have been reported, following laparotomy. Dr. Edgar Kurz reports a case, where the patient was in collapse with stercoraceous vomiting; operation performed and a portion of the colon found, ensnared in a fibrous ring. The intestine was relieved and recovery was rapid. Dr. Palaillon reports a case with as favorable results. It is our duty, therefore, not to allow the patient to succumb for want of surgical interference. In the treatment of soft chancres it is found that no remedy heals them more rapidly than iodoform, and prevents more uniformly the occurrence of suppurating bubo. The only objection to the powder is the suggestive odor; this can be obviated in a measure by dissolving the powder in ether, using a drop at a time and covering with perforated iodoform plaster muslin, which has been perfected by Beiersdorf.

AMPUTATIONS.

Excisions and resections still hold the place heretofore secured.

FRACTURES.

Little new in the treatment of fractures has been observed. Treatment of fractures of the patella is perhaps as important as any. The infrequency with which this operation is performed in this country, as compared with Great Britain, renders it noteworthy. Dr. Robert T. Morris, of New York, treats fractured patella by wiring the fragments

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together, and reports three cases with admirable results. Dr. L. C. Fuller also reports one case out of four operated upon which resulted favorably, as well as the others not reported.

Two sutures of silver wire were used for the patella, one seam of catgut for the joint capsule, another for the integument and dressed antiseptically. Evidently Listerism has come to stay, notwithstanding some fail to appreciate it. If it has but awakened more vigilance to cleanliness, it has done well. Hardly any of us, no matter how skeptical we may be, care to engage in any great operation without adopting the principles it embodies.

Since our last annual meeting there has been given us a surgical boom second only to ether and chloroform, namely, the hydro-chlorate of cocaine. It is extensively used in operations on the eye, nose, mouth and throat. Also in the removal of small tumors on the surface.

Dr. Smith, of Hanover, N. H., removes ingrowing toe-nail under the influence of the above anæsthetic, without pain. He states that the patient watched the operation with evident satisfaction, claiming that it was absolutely painless.

ADVANCES IN GYNÆCOLOGY.

By W. N. BRYANT, M. D., Chester, Vt.

Facts are notoriously stubborn things; and I am aware that they are not alone stubborn, but sometimes monotonous as well, not to say uninteresting, when taken without dilution. This is my excuse for giving you a judicious admixture of fancies with which to season the few facts which I have to present. Our times have never been paralleled for critical, painstaking investigation in all departments of science. This means mutation and progress—we trust advancement. While gratifying progress is made in all the avenues of medical science, probably gynæcology, as a specialty, has been more largely developed within a few years than almost any other branch of medico-chirurgical research. It is undeniable that gynæcology is a seductive study; that while a lively interest attaches to all branches of our art, a certain weird kind

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of fascination seems to envelop this, which does not obtain in other departments. As proof of the truth of this, I would refer you to the vast amount of human ingenuity and inventive genius, to say nothing of monetary matters, that have been, and are still being expended in the vain pursuit of an *ideal pessary*. Why this is so I am unable to explain, unless it be that same irresistible interest which always envelops the mysterious and hitherto unattainable.

Apropos of this, I am tempted to moralize a little, and to suggest that the interest manifested in the solution of the mysterious is not always commensurate with the result to be obtained, even in case of success. For instance, many lives and much treasure have been sacrificed in attempts to reach the frozen pole. But when these attempts shall finally be crowned with success, it is by no means certain that this portion of our globe will ever become popular, either as a health resort or for agricultural purposes. So I have sometimes wondered if, when some enthusiastic devotee shall discover the gynæcological Utopia by inventing the truly ideal, never-failing, self-adjusting, non-irritating, non-corrosive, non-combative, self-satisfying pessary—if, I say, after all, there will be left no more worlds for the enterprising specialist to conquer.

If advancement is to be measured by the number of such instruments brought forth in a given time, the past year can make a very creditable showing. Had I supposed it would devolve upon me to prepare this report, I would have made note of these articles and thus have been able to describe them *seriatim*. As it is, memory must be trusted. My notice has been called, per circular and otherwise, to about an equal number of new specula, ideal pessaries and Eureka vaginal irrigators, and, after some deliberation, I place the gross number at nine hundred and thirty-seven. (This report has not been audited, and is subject to correction.) Each of these instruments was warranted to fill a long felt want, which no doubt they would do, provided sufficient of them were sold to pay the inventors. I have made a little calculation, from which it appears that, if any of us were so fortunate as to have safely in bank the retail price of each different instrument that has been devised to torture a refractory uterus into a state of moderate conservatism, we would have no further necessity for practicing either gynæcology or economy for the remainder of life. Pardon me for suggesting that any one *might* even practice an humanitarian art for lucre! Seriously, gentlemen, there have been no startlingly novel developments

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during the year in the treatment of the diseases of women. The progress seems to be more in the direction of improving and elaborating already recognized methods.

Among the major surgical procedures, the operation for removal of the ovaries, proposed by Battey and known by his name, further recommended and practiced by Tait, is rapidly gaining ground and being recognized as a legitimate operation. The introduction of antisepsis, making, as it has, a revolution in abdominal surgery, has helped much to popularize the operation. Noeggerath has proposed some new points in ovariotomy, the principle of which consists in conducting the operation upon a hot water (rubber) bed. This avoids shock from depression, caused by the long exposure of the viscera. He proposed this method some time since, and claims good results. Cocaine naturally finds its place here, as elsewhere. It has proved valuable in hyperæsthetic conditions of the vagina, which had in some cases previously precluded all instrumentation in treating uterine troubles; such conditions as often obtain in unmarried women. A small pledget of cotton soaked in a four per cent. solution and applied to the parts, makes the subsequent introduction of instruments painless. Engelman, of St. Louis, is quite enthusiastic regarding this, and has published results that are remarkable. A brief résumé of his statements is as follows: Cocaine is highly useful in cases of vaginismus, cervical and endometritis, erosion and ulceration of the os, dysmenorrhœa, etc. Emmett's operation, and the operation for vesico-vaginal fistula have been done painlessly under its influence, by first painting the surfaces and then injecting a few drops into the tissues. It has been used hypodermically over the ovarian region, in cases of so-called ovarian colic or neuralgia, with success. In short, it seems to have great possibilities before it, in gynæcology.

Regarding chronic uterine and cervical inflammations, the tendency is toward the use of milder remedies locally. In this connection the last mentioned author has already reported, and is now engaged in elaborating what he terms the "dry method" of treating these cases, so called in contradistinction to the usual custom of using liquid applications, such as iodine, glycerine and its compounds. The parts being cleansed are dusted over, by means of a "blower," with some powdered medicament, he particularly recommends alum, tannin, borax, iodoform, borocic acid, etc. Large wads of cotton are then applied in a way to tend toward the rectification of any mal-position that may ex-

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ist. This treatment is repeated each third or fourth day, with, it is claimed, unusually satisfactory results.

The fluid extract of hydrastis canadensis has been brought into notice, as a remedy for menorrhagia. From personal experience I can speak highly of it in twenty drop doses. Its effect is also well marked in cases of leucorrhæa and in the severe discharges accompanying uterine fibroids.

Bartholow has recently mentioned potash permanganate as an efficient emmenagogue, while viburnum has acquired more or less fame as an anti-abortive.

Perhaps the greatest advance in gynæcology is, after all, in a general rather than any specific way. I refer to the tendency to simplify the minor surgical operations, and thus bring them within the scope of the general practitioner. Heretofore these operations for the repair of the cervix and perinæum have in great measure been turned over to the specialist. Rural practitioners have hesitated to meddle with them. We have been intimidated by the formidable nomenclature, the multiplicity of unnamable instruments and the minute directions which have accompanied these really simple operations, the technique of which has been invested with so much of mystery. But when these polysyllabic Greek terms are replaced by their English equivalents, and we find that instead of a score of queer instruments we need only a half dozen, the most of which are found in an ordinary pocket-case, we approach these things with a greater degree of equanimity. Things are much changed in this regard, and physicians who, years ago, limited their gynæcological surgery to an occasional introduction of the catheter, or perchance to applying nitrate of silver to such portions of the genital tract as might present at the base of a glass speculum, are now quite equal to performing these plastic operations. Nor are wanting those among us who are willing to attempt the major operations, and do so with creditable success. This tendency argues a palpable advance which we should do well to encourage. Many patients needing operations of this kind *cannot* avail themselves of the services of a metropolitan specialist, and there seems no good reason why the general practitioner should not live up to his privileges in this regard.

Engelman, before referred to, has recently contributed a very interesting and practical article upon the simplification of these plastic operations. One novel feature of his procedure consists in operating, not under the spray, but with antiseptic irrigation. A small and continu-

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ous stream of *hot* water, containing mercuric bichloride, one part to two thousand, is thrown upon the parts, which are held open with Sim's speculum and retractors. By these means not only thorough antisepsis is secured, but the hemostatic properties of the hot water prevent hemorrhage and obviate the frequent use of the sponge, which materially facilitates the operation.

This paper would not be even approximately complete without referring to the fact, more thoroughly recognized each day, that the intelligent obstetrician very materially lessens the labors of the gynæcologist, by preventing the occurrence of what the latter strives to cure.

Finally, gentlemen, I must beg your pardon for closing without distinctly recommending some special form of pessary with which to amuse your patients. The fact is that with so large and constantly increasing a variety from which to select, and each one bearing such trustworthy testimonials of special virtue, any discrimination that might be made would seem invidious and might be unjust.

THE KOCHER METHOD OF REDUCING DISLOCATIONS OF THF HUMERUS.

By C. E. CHANDLER, M. D., Montpelier, Vt.

A description of this method of reducing subcoracoid dislocation of the humerus was first published by Professor Kocher, of Berne, in 1870.

At that time he intended the description for recent cases, but in 1881 he read a paper at a meeting of the International Medical Congress recommending its use in cases of long standing, and giving the histories of eleven successful cases, the duration of the dislocations varying from three weeks to four months.

The "Kocher Method" was recommended for recent cases of subcoracoid dislocations by Ceppi in 1878, and for cases of long standing in 1882. For recent cases, the method has also been recommended by Garafi in 1881, and a short time afterward by W. Chisholm, who reported five successful subcoracoid cases and one subglenoid.

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In 1883, Dr. C. A. Jersey published the histories of twenty-one recent subcoracoid cases, taken from the records of the Chambers street Hospital, New York, which were reduced by the Kocher method. An anæsthetic was not used in any of the cases.

In 1884, Dr. Abby, at a meeting of the New York Clinical Society, referred to two successful cases, one a subcoracoid, the other a subglenoid.

During the last year the "Kocher Method" has been used in many of the Hospitals, but at the present time I have not been able to find a description given in any of the books upon surgery, and for this reason I thought it might have escaped the attention of some of the practioners.*

The method as described by Professor Kocher, is as follows: "patient sitting up; the forearm is flexed to a right angle with the arm; the elbow pressed firmly to the side of the chest; the arm rotated outward until firm resistance is met with, then, the arm still rotated, the elbow is carried forward and inward over the chest to the median line, then the arm is rotated inward."

Professor Koeher claims that by these movements the edges of the rent in the capsule are relaxed and the head of the humerus is made to approach the glenoid cavity. If this opinion is true, it is readily seen that the older methods by traction and manipulation would cause the edges of the rent to become more tense, and grasp the neck of the humerus more firmly, driving the head of the bone against the side of the glenoid cavity.

Kocher believes, that in subcoracoid dislocations, the superior or anterior edge of the rent, consisting mostly of fibres of the coraco-humeral ligament, is relaxed " only after flexing and carrying forward the humerus in its position of outward rotation."

The band of fibres, forming the inferior edge of the rent is rendered more tense, and throws the head of the humerus backward into the glenoid cavity, instead of allowing it to pass forward.

Kocher has used this method, with success, in twelve cases of long standing. The duration of the dislocations varied, three weeks in one case, five weeks in two cases, seven weeks in three, three months in four, four months in two. In one case he fractured the humerus. This was a patient seventy years of age, and the duration of the dislocation was eight weeks.

*Since writing the above, I have found a short description given in Fractures and Dislocations, by Hamilton, published in 1884.

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Ceppi has also reported twenty cases of long standing in which this method was successful.

My attention was called to this mode of reducing dislocations of the shoulder by a short article in one of the journals of the American Medical Association, and on looking over other journals, I found the facts as stated above.

During the summer I have had an opportunity of using the Kocher Method three times.

The history of the case is as follows: patient J. J., male, age twenty seven years, printer by trade, always been strong and healthy. Says that he has had his left shoulder dislocated twenty-five times. Has usually experienced great pain and difficulty in its reduction, and has several times been obliged to take an anæsthetic.

On the tenth of June, 1885, while holding his arm above his head to bend a scythe, the left shoulder was dislocated.

The patient walked to our house, a distance of about one fourth of a mile, and when seen by us presented the following characteristic symptoms of dislocation of the humerus, under the coracoid process; left shoulder much lower than the right, and arm hung immovable by his side, the elbow thrown outward from the chest wall; shoulder flattened; acromion process very prominent; well marked groove beneath it; head of humerus not felt in its natural cavity, but under the coracoid process of the scapula.

The patient was seated, the coat and vest removed, and the following movements were made: the wrist of patient was grasped with the left hand, the arm a little above the condyles with the right hand, the fore arm was flexed to a right angle with the arm, the elbow was carried well to the side of the chest, the arm rotated outward until resistance was felt, and the elbow was carried toward the median line of the body. When about half way the muscles were felt to harden and contract, and the head of the bone slipped into the glenoid cavity. The movements were all made carefully and slowly and without traction.

On June 25th, 1885, while sawing a limb from a tree the same shoulder was again dislocated. He was seen about one hour afterward and presented the same symptoms as before. At this time the dislocation was reduced after the arm had been rotated outward "until firm resistance was met with" and before the elbow had been carried inward toward the median line.

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The shoulder was again dislocated on September 2d, 1885, and this time it was reduced after rotating the arm outward.

The manipulation caused very little pain to the patient, and each time it was completed in a few minutes,

By using the Kocher method, the reduction is completed in a very short time, very little pain is produced, rendering the use of an anæsthetic unnecessary.

N. Y. Med. Jr., February 3, 1883.
N. Y. Med. Jr., September 29, 1883.
N. Y. Med. Jr., April 19, 1885.
Jr. Am. Med. Ass., February 21, 1885.

NOTE.—January 4th, 1886.—Since the meeting of the Society the same shoulder has been dislocated twice, on December 2d and on December 25th. Each time it was reduced by the Kocher method and with as much ease as before.

PURPURA HAEMORRHAGICA.

BY E. S. ALBEE, M. D., BELLOWS FALLS, VT.

MR. PRESIDENT AND GENTLEMEN:—

In presenting this short paper with the very incomplete history of a case of Purpura Hemorrhagica, I do not expect to add anything new to the subject, but hope to bring out in discussion some points of benefit to myself and others, especially as to treatment. I am led to do this from the fact of having had a case a short time ago which I treated according to best authority that I could get from my books, with a very unsatisfactory result.

I shall not go into a description of the symptoms of the disease, for they are too well marked to need a repetition here, but shall speak of some of the causes, Pathological Anatomy and nature of the disease.

Under the head of causes may be mentioned any debilitating disease, impure air, scanty or indigestible food, continued fatigue, cirrhosis and acute atrophy of the liver, Bright's disease, syphilis, severe cases of jaundice, amenorrhœa, etc., but, at the same time, it is seen in those that are not subject to any of these causes, and that are apparently in sound health, and have been up to the time of the attack.

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In speaking of the Pathological Anatomy, of course it will be wholly quotations from different authors.

These hemorrhages or effusions are liable to be found in any part of the body, but are less apt to be found upon the serous membrane, or the lungs or cerebrum. The blood, in some cases, is quite natural and coagulates naturally, while in others it is unusually fluid, indisposed to coagulate. In some cases the liver is found healthy, while in others there is found cirrhosis, atrophy, anyloid degeneration.

Dr. Habershen, in Guy Hospital, reports a number of cases where the spleen was large and red throughout, studded with pale yellow spots connected with capillary circulation where the white corpuscles of the blood were not in excess, but were rather deficient. The capillaries of the skin have been examined by some and pronounced healthy, but Dr. Wm. Fox reports a number of experiments with sections of skin near hemorrhagic extravasations, treated with solutions of chloride of zinc and iodine, or iodine alone, where he found the capillaries and smaller arteries very much weakened.

As to the nature of the disease, much uncertainty exists. There must be a rupture of the blood vessel, but whether from a weakened and disordered condition of the vessels, *a priori*, or to some change in the blood which, originates a change in the vessels, or it might be due to a loss of nerve control, while some modern observers have adopted the view that change in the quality of the fibrin of blood, rendering it liable to coagulate in a gelatinous manner, existed in purpura.

Frerichs has suggested that there is an abnormal attraction between the wall of the vessels and the blood, which has become altered in its composition, which produces obstruction and ruptures of the capillaries; while some authors, amongst whom is Niemeyer, I think, thinks the trouble may be with the Vaso Motor nerves.

After this very imperfect paper, I will give a short history of a case which lately occurred in my practice.

Was called, December 30, 1884, to W. R., aged 3 years; found him suffering with pain and soreness of the limbs, especially when walking or upon pressure. Pulse 120, temperature normal, tongue slightly furred. His mother said, for the last two or three days he had complained of it hurting him when walking, more particularly in the afternoons, but that he was very well in the morning. At that time I thought the case to be muscular rheumatism. December 31st, found the patient up and at play, and his mother said he was feeling better

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and had not complained of the soreness in his limb as much as on the previous two or three days. I would here say that on my first visit I prescribed small doses of salicylate of soda.

January 1st, 1885, was called to see the case early in the morning, for they said the boy was breaking out. When I arrived found the patient with a high pulse and a temperature of one hundred. Scrotum and penis very much swollen and very dark colored, and at this visit I found a number of spots of purpura upon the body and limbs. Bowels constipated at this visit. I prescribed tincture of iron and tincture of nux vomica, with a mild cathartic. And from this time the purpura extended over the whole body and face. On the sixth day there was a very profuse hemorrhage from the bowels, and he commenced vomiting. The hemorrhage from the bowels was controlled by fluid extract of ergot, after about forty-eight hours; but the vomiting persisted until the time of death, which occurred on the 28th of January, 1885. To give the history of the case from the time the vomiting commenced, as briefly as possible, I would say that there was an afternoon temperature of from one hundred to one hundred and one degrees; pulse from one hundred and forty to one hundred and fifty, with more or less epistaxis every day, I think; constipated bowels, no appetite, with persistent vomiting of all drinks and nourishment. During this time I had tried the acid with all of the different preparations of pepsin and lactopeptines, beer peptinoids and the different kinds of prepared foods, but they were all rejected soon after being taken. The matter vomited was always of a very dark green or almost black color, with more or less undigested food mixed with it.

From the time the vomiting commenced, there was gradually emaciation. And the case took on a low typhoid character, and death occurred from asthenia.

In conclusion, I would say that the thought has suggested itself to me, since having that case and studying it to the best of my ability, the trouble is more with the nervous system than is generally thought, and whether a treatment directed more to that would not be followed with better results. And, hoping to get light from the Society on this uninteresting subject, is my excuse for presenting it.

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A CASE OF FRACTURE AND DISLOCATION OF THE VERTEBRAL COLUMN.

By L. M. GREENE, M. D., Bethel, Vt.

On the 3d day of last September, a man thirty-five years of age was struck by a falling tree. Complete paralysis of all the parts below the waist, both as regards motion and sensation, immediately followed. He was dragged from under the tree top, which, by the way, was not resting upon him, by his father, and then left alone until a team could be brought from a house about one mile distant, and a road cut through the dense underbrush to him, which took about one hour. He was then put into the buggy wagon on his knees, his elbows resting on the wagon seat, and taken to the house over a very rough road, suffering the most severe pain in his back all the while. I arrived at the house just as the wagon, with the patient, came in sight, Dr. W. E. Sylvester accompanying me. A superficial examination was made and a slight swelling discovered in the dorsal region, and nothing else. Put patient on to a stretcher and carried him to his home, a distance of about two miles.

Dr. C. C. Smith, of Gaysville, was summoned, and upon consultation it was decided that we had a fracture of the eighth or ninth dorsal vertebra. The patient was a very muscular man, and no crepitus could be made out by manipulating the parts. No bruises or discoloration whatever was present, only swelling in the region of the eighth dorsal vertebra, with slight angular deformity. The patient was put in the dorsal decubitus, with an ice bag under the back, morphia to relieve pain, and catheter to empty bladder. On September 4th Dr. W. M. Huntington, of Rochester, was called, in consultation with Dr. Smith and myself. Diagnosis concurred in and an expectant line of treatment decided upon. During the first ten days the patient suffered severe pain in the back upon any attempt at movement, either active or passive. The ice bag was kept at the seat of injury, morphia as needs of case demanded. Complete paralysis of bladder and rectum were present from the first, although sphincter ani acted for a while. Dribbling of urine was constant after first week, although catheter was passed four times a day. No myelitis occurred at any time, and after third week patient could be moved from side to side of bed without

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causing any pain whatever. About this time (third week) a slough or eschar formed on bottom of great toe and increased until the whole of distal phalanx of the toe came away, after which granulation and cicatrization occurred. Neuropathic bed sores over both trochanters followed, in spite of rubber air cushions and constant attention to prevent them.

Septicæmia took place at the eighth week, as a result of absorption of septic matter from the sloughs on the hips. Severe chills and a temperature ranging from one hundred and two to one hundred and four characterized this condition. Quinine and morphia were regularly given. And so the case went on, emaciation and exhaustion gradually wearing the patient out, although he ate and slept well all the while. Ulceration of bladder required regular washing out of that viscus every day for two months. On the night of February 11th, five months and eight days from the receipt of injury, the poor fellow died. The right trochanter and about eight or ten inches of the femur were laid bare, by sloughing and rotting away of the muscles, etc. He was but a mere skeleton.

An autopsy on the following day, attended by Drs. Upham, Bailey, Perry and myself, discovered the spinous process of ninth dorsal vertebra fractured at its base, the body and laminæ of the same bone broken, and it, with the vertebral column above it, dislocated forwards upon the vertebra below, which was driven into the ninth, crushing the latter. Solid union of all the bones except the fractured spinous process had occurred. The eighth, ninth and tenth vertebra were removed, and I put them into a potash solution preparatory to cleaning, and when I looked for the specimen a few weeks ago, I found my solution had been so strong as to reduce the bone to powder. Hence the absence of the specimen at this time, as I intended to show it to the members of this Society. The spinal canal was completely obliterated not even a knitting needle could be passed through it, showing that the spinal cord must have been severed or crushed at the time of the accident. The cord above and below the injured vertebra was apparently sound.

In remarking upon the treatment of this case, I would say that good surgery at this present time would as a rule say, reduce the fracture in such cases. The question of reduction was carefully considered by the council, and in this particular case thought best to let it alone, although upon reflection I can see no great harm being done in an at-

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tempt to reduce the fracture and dislocation. However, as the sequel proved, it could have done no good whatever. Several lives have been saved by reducing a fracture or dislocation of the vertebral column, more especially in the cervical region. Therefore in all cases of the kind I would practice reduction at once. Another important particular in the treatment of these cases is to prevent inflammatory action or ascending myelitis. This was most succeessfully done in the present case, and his life prolonged over a period of several months.

MULTIPLE SYNOVITIS.

COMPLICATING ENTERIC FEVER—WITH REPORT OF CASES.

By E. J. FISH, M. D., Tunbridge, Vt.

Mr. President and Gentlemen :—

It has been justly said that typhoid or "enteric fever is conspicuous among the acute diseases, for the number and variety of its complications and sequels."

Some of these, for example, intestinal hemorrhage and perforation, are of comparatively frequent occurrence; while others, and especially those of a surgical nature, for example necrosis of bone and synovitis, are far more rarely encountered.

Two forms, however, of synovial inflammation occur in connection with typhoid fever.

First, a single or monarticular form, which is almost always confined to the hip. It is subacute, apparently causing but little pain, though intra-articular, and liable to produce rapid effusion and dislocation. It is not accompanied by any peculiar constitutional disturbance.

Second, a multiple form, which, as the term implies, attacks several joints simultaneously, or in rapid succession, usually, also involving the periarticular tissues to some extent. This form is acute, though its effects may be lingering. It is painful, and its coming is attended by well marked constitutional symptoms.

Both forms are said to be rare, the multiple apparently being much the more so.

Between these two forms there is a wide pathogenetic distinction—a

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distinction which must be borne in mind, and which Barwell* embodies in a single sentence, as follows: "Uni-articular, acute, or subacute disease is local; mult-articular maladies are constitutional."

The object of this article, gentlemen, is to invite your attention to the latter form—the multiple synovitis of typhoid fever.

I shall not discuss the monarticular form, which Barwell† regards as a specific part of enteric fever, though perhaps it might be not unreasonably regarded as a result of the profound disturbance of nutrition, incident to that disease. I have never seen a case of this form, but during the last two years I have chanced to meet, in practice, two cases of the multiple form, upon a report of which this article is chiefly based.

The literature upon this subject is very scanty. "Beginning as cases of this affection do in the domain of medicine, and terminating in that of surgery, we lack their complete history, perhaps from the very fact of this division of their care and interest."‡ Sir James Paget remarks that, while "the sequelæ of scarlet fever are commonly enumerated, those of typhoid fever, especially those seen in surgical practice, though scarcely less numerous, seem less known."§ Loomis' Lectures on Fevers, and Wilson's excellent monograph on The Continued Fevers, neither of them mention the occurrence of such a complication in connection with typhoid fever. Ziemzen's Cyclopædia is equally silent, and no allusion is made to the subject in any of the systematic treatises on theory and practice which I have examined, except Pepper's System of Medicine, which states that pyæmia is said, by Murchison and some other authors, to be an occasional sequel of typhoid fever, and that in some severe cases pus has formed in the joints. Reference is then made to two cases of suppurative joint affection complicating typhoid fever, reported by Robin in the *Paris Gazette* in 1881.

One of these cases was of the multiple form—the joints of the fingers and toes, with the sheaths of the corresponding extensor tendons, both knee joints and one shoulder being affected.

The other case was monarticular, the left knee being filled with pus. Both cases soon assumed an adynamic type.

Writers on surgery have rarely noticed the affection, and when noticing it at all, only with the greatest brevity.

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*International Encyclopædia of Surgery, Vol. IV, page 262.

†Diseases of Joints, 2d Ed., foot note, page 78, (Wood's Lib., 1881.)

‡*Keen*-Fifth Toner Lecture.

§Clinical Lectures and Essays, London, 1875, page 378.

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Hamilton* incidentally remarks that "Synovitis may occur as a sequela of fevers," and says that "the relation between them cannot always be easily determined."

Keen† speaks of a polyarticular inflammation, which he says may assume either a rheumatic or a pyæmic form.

The so-called rheumatic form he dismisses without explanation or comment.

He says the pyæmic form is not very common, for Murchison, with his immense experience in the London Fever Hospital, has seen but one case. By the way, this case must have occurred recently, for Barwell‡ says that up to 1881 no such complication had been recorded in that institution. Keen§ says "It is most apt to occur in severe cases in which the blood change is at its maximum, and the 'typhus crasis,' as Stokes has expressed it, possibly *becomes converted into pyaemia.*"

By reference to the Index Catalogue of the Library of the Surgeon General's office, I find a few reported instances of joint affections, complicating or occurring in connection with typhoid fever, most or all of which were diagnosticated and reported as *rheumatism.* Thus in the *Boston Medical and Surgical Journal,* 1852 and 1853, Vol. xlvii, page 196, Dr. Fulsome reports a case of typhoid, complicated by *rheumatism.*

In Guy's Hospital Reports for 1869, Habershon records a case of typhoid, complicated by bronchitis and *rheumatism.*

In the Transactions of the Connecticut Medical Society, 1872–1875, Dr. J. W. Lyon reports the occurrence of typhoid and acute *rheumatism* together. The original articles thus referred to, I have not been able to examine.

Of the monarticular form, quite a number of cases have been reported from various sources, but they, of course, do not particularly concern us here.

The most complete description of the joint affections which may complicate typhoid fever, is by Boswell in his monograph on Diseases of the Joints, and his article in Vol. IV International Encyclopedia of Surgery. He says,‖ "This class of joint diseases deserves a closer study than has yet been accorded it, but a difficulty lies in the appar-

*Principles and Practice of Surgery, 2d Ed., page 425.
†Fifth Toner Lecture.
‡Diseases of Joints, 2d Ed., page 77. (Wood's Lib., 1881.)
§Fifth Toner Lecture.
‖International Encyclopedia of Surgery, Vol. IV, page 292.

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rent variety of those affections, which almost precludes the possibility of any one practitioner seeing a sufficiently large number of cases." "Yet it may well be," he says, "that when attention is called to the subject, these conditions may be found more common than they are at present supposed to be. For instance, we often hear of a rheumatism consecutive to scarletina, etc., but a better appreciation of these multiple joint pains, which have thus been likened to rheumatism, would insure a clearer insight into their nature, and a better starting point for their study."

CASE I.

Henry Slack, a strong and previously healthy boy, ten years old, was taken sick about August 1st, 1883. August 6th I found him in the first stages of typhoid fever. Unfortunately, as often happens, a vigorous cathartic had been administered, and the patient had a most intractable diarrhœa. The case throughout was of extreme severity. There was early delirium, quickly followed by stupor, and at the end of a week the patient was utterly insensible, in which condition he lay about six weeks, never during the time speaking a word, swallowing and performing the functions of life unconsciously. He was kept alive only by the most assiduous nursing. During the second week, his axillary temperature was never lower than 103 2-5, and in the evening it invariably reached or exceeded 105. During the third week, the morning remissions were more decided. In the fourth week the temperature showed a marked decline, and one morning it fell to 99, which, with some other favorable symptoms, seemed to announce approaching convalescense.

During the day, however, the patient had several though not very severe rigors, and the following morning his temperature had risen to 101 3-5, the chills recurring occasionally meantime. The next morning his temperature was 103 3-5; though some of the time during the night he had sweat profusely. The patient now had severe and repeated rigors, frequent vomiting, and a small and feeble pulse of 140.

Quinine, alcoholics and nutrient liquids, (chiefly milk), were given freely, though in small quantities at a time, and per rectum when the stomach was intolerant. I was unable to visit the patient in the evening of this day, but Dr. Corwin, of Chelsea, visited him for me, arriving about seven and remaining until eleven P. M. He found the patient apparently suffering severe pain, which, however, could not be definitely located. The patient lay upon his back, with the legs drawn

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up, the knees bent to an acute angle. This position naturally led to the supposition that the pain was abdominal, and peritonitis or perforation was feared.

The patient was so restless that the thermometer could not be kept in the axilla more than two or three minutes, but even in this time it indicated 105°. The respiration was 44, the pulse 160, small, feeble, and some of the time so flickering that it could not be counted. The restlessness and apparent suffering were relieved by morphia, hypodermically. The doctor left the patient about 11 P. M. apparently moribund. But the following morning, contrary to expectations, we found him still alive, seeming to suffer but little pain, a temperature of 104 3-5, a pulse of 156, and a stomach much more tolerant than for twenty-four hours previously. The abdomen was but little distended, not very tense, and moderate pressure did not seem to produce pain. Evidently there was neither perforation nor peritonitis. Still the patient kept his legs drawn up, (the knees of course flexed), and made violent outcries at any attempt to straighten them, a circumstance which I did not understand until I discovered that both knees, both ankles and the tarso-metatarsal articulations were inflamed, swollen, and so tender to the touch that the patient evidently suffered intense pain whenever they were handled.

Physical examination of the chest now revealed consolidation posteriorly of the lower portions of the left lung, and the patient had cough with bloody sputa. In spite of such an apparently hopeless condition, he gradually improved and recovered. The stiffening of the knee joints and the faulty position of the legs slowly yielded to passive motion and stimulating frictions, but it was four months before he could walk, i. e., nearly six months from the date of first illness.

I purposely avoid applying the term anchylosis to the stiffening of the joints in this case. Every stiffened joint does not owe its immobility to anchylosis. The term is often abused. In this case, as no doubt frequently happens, the synorial inflammation expended its chief activity on the surroundings of the joints, and the temporary impairment of mobility was due to periarticular impediment. There is still some enlargement about the joints, which undoubtedly will remain permanently.

I have omitted to mention a curious affection of the skin over these joints. Soon after the joint affection was at its height, circumscribed patches of skin, one-half inch or more wide, and from two to four

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inches long, extending in a direction transversely across the limb, became inflamed, reddened, and assumed precisely the appearance a hot iron would produce if drawn over the surface. These places were situated upon the anterior aspect of the limb, and were from four to six in number, over each inflamed joint. The skin did not slough so as to leave an open or ulcerated surface, but gradually exfoliated, leaving, however, the distinct cicatrices which you see. It is evident from their form, character, and location, that they were not the result of pressure, and no local application was made prior to their appearance. The why and wherefore of their occurrence has ever been a mystery to me, and I shall be glad to hear it explained.

CASE II.

October 10, 1884, I was called to Alice Moxley, a previously healthy girl nineteen years old. She had been sick with typhoid fever about five days, and had come home from school a distance of about twelve miles. In this case as in the other, there had been some well-meant but ill-directed prescribing, a brisk purgative had been given, and the result was a troublesome diarrhœa for the first week or ten days. Aside from this, the case was of moderate severity up to the seventeenth day. The temperature at no time had exceeded 103 3-5, nor the pulse 112. The patient was taking and digesting a good amount of liquid nourishment, (chiefly milk), and was receiving but little medicine.

On the evening of the sixteenth day the temperature was 103 1-5, the pulse 108. On the morning of the seventeenth day I found the patient with a temperature of only 98 under the tongue, and a pulse of 84. There had been no hemorrhage, and this sudden fall of pulse and temperature at this period of the disease seemed remarkable.

The bowels had not moved for thirty-six hours. An enema of soapsuds was given, and an easy evacuation secured. I remained some time with the patient. She soon complained of chilliness and nausea, which at the time I supposed was the effect of the enema, but which in reality as I soon found was of far more serious import. During the day the patient had repeated and increasingly severe rigors, nausea, vomiting, some sweating, and moderate abdominal pain.

In the evening I found her with a temperature of 104, a respiration of 36, a pulse of 140, an abdomen somewhat distended, tender and tympanitic, nausea constant, vomiting occasional.

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The following morning her temperature was 104 2-5, pulse 146, small and feeble, respiration 40, intellect clear, nausea, vomiting and abdominal symptoms as before.

Dr. Chandler, of Montpelier, was now called in consultation.

Evidently some serious complication had arisen, though what we could not then decide. I remained constantly with the parient. During the day the axillary temperature rose to 105, the pulse to 156, so feeble and of such irregular volume, that it was counted only with difficulty.

Nutrinet enemata, combined with alcoholic stimulants, were given at suitable intervals. The nausea and vomiting seemed to be somewhat relieved by small lumps of ice frequently swallowed, with the Deod. Tinct. of opium in two drop doses every hour. At any rate during the afternoon the stomach became more tolerant, so that thirty grains of the sulphate of quinine were given in divided doses in the course of three hours, and retained by the stomach. Before nine o'clock P. M. the temperature fell to 103. The pulse had not yet improved, but before the next morning it fell to 136, was stronger and more regular.

A most offensive odor soon became noticeable in the patient's breath —a peculiar, sweetish, sickening, mawkish odor, which soon became so intense as to pervade the air of the good sized room in which she lay and that of a large adjoining room used in common with the sick chamber, a door being open between them.

The patient now began to complain of pain, and inability to move both elbow joints and the right knee. She also developed a slight pleurisy of the right side, which fortunately subsided without giving any particular trouble.

The pain and swelling of the knee joint were but slight and soon disappeared, but applications being made—the limb, of course, being at rest. The difficulty with the elbows the left especially, was more lingering,

The swelling was considerable, though not great, but the pain and tenderness on pressure or movement were very marked.

The constitutional treatment consisted chiefly of a generous but carefully regulated diet, the cautious employment of alcoholics, small doses of opium, and the administration of quinine.

There was a tendency on the part of the patient to bring the elbows into extreme flexion. With some difficulty, and considerable pain,

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they were brought nearly to a right angle, and immobilized in that position.

Hot applications were made almost constantly. Later, when the acute symptoms had subsided, passive motion was instituted, together with inunctions of mercuric biniodide.

The patient made a complete recovery, though it was more than six months before the forearms could be fully extended.

CASE III.

That of a man about twenty years old, occurred in my vicinity three years ago, but was not under my observation. I am unable to get any intelligent account of the case, except the fact that some time during the third week of typhoid fever several of the joints were swollen and painful. The doctor who attended the case made no use of the thermometer even. He diagnosticated rheumatism, and I suppose treated it accordingly after his own fashion.

In regard to the variety of this complication, gentlemen, is it really as rare as the scantiness of its literature and the fewness of reported cases would lead us to to believe? Or does the affection actually occur oftener than has been supposed, but fails of report, being regarded as simply an intercurrent rheumatism, and hence of no spcial interest? It may be well to note that Dr. Barwell in his immense experience has seen but two examples of multiple synovites during typhoid fever. (See Int. Encyc. Surg. Vol. IV, page 293.)

I shall omit a consideration of the treatment of this affection, because it would be based only upon a presupposition as to its pathology, which is a principal point I leave for discussion. Gentlemen, I hope your patience is not wearied with a too lengthy and detailed recital of these cases. To me they seemed interesting, and worthy of report. In regard to their pathology, were they cases of consecutive or intercurrent rheumatism, merely coincident with typhoid fever? Or was there a more specific interrelation? Were they from pyaemic infection, the intestinal ulcers being the "fous et origo"? Perhaps it is needless to say that I hold to the latter view.

In the symptoms, character and course of these cases I could see no point of resemblance to rheumatism, except the existence of an acute multarticular inflammation. It is well known that in rheumatism the likelihood of cardiac complication is vastly increased during the early years of life, and remains very great up to the age of twenty-five.

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It may be noted that both my patients were young—one ten, the other nineteen, but in neither instance was the heart involved, as might reasonably though not necessarily have been expected, if the joint affection had been rheumatic.

My second case I regard as unmistakable, and, moreover, as showing that this complication may arise in a case otherwise moderately severe. What was the immediate cause of the marked and sudden fall of pulse and temperature on the 17th day? Could it have been the earliest manifestation, a sedative effect, from absorption of septic material? Was the abdominal pain and distension evidence of a local inflammatory action identical with what ordinarily occurs—in a wound, for example—at the time of septic absorption? The nausea, vomiting, the rigors, elevated temperature, and other symptoms, were they not precisely such as would be expected if the theory of pyaemic origin be correct?

I submit the subject, gentlemen, for your consideration, hoping not so much to interest you, as to be myself instructed by your kindly criticism, and the discussion which I hope to elicit.

RUPTURE OF VAGINA DURING FIRST COITUS.

By R. H. SABIN, M. D., West Troy, N. Y.

On the early morning of the 29th of June, 1885, I was called in haste to see Mrs. S., aged 22 years, of good form, and well developed, of nervous temperament, and sharp black eye, and learned as follows:

She was married the evening before, and in the act of coitus felt a severe, sharp pain, which was followed with a profuse hemorrhage, which alarmed herself and husband, and her mother in the same house was called and I was sent for, with the request that I come as soon as possible. On making an examination I found the vagina full of clots, which were removed, when to my astonishment I found a rent or tear, which commenced at the entrance of the vaginal canal, or continuation of the hymen, and extended on the left of the median line, backward to and across Douglas' cul-de-sac, up on the right side of the vagina about one third. The uterus and bladder were normal. She was still bleeding, frightened, pale and faint. After washing the vagina

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with carbolic acid and warm water, I filled it with surgeon's cotton wet with the same solution, ordered brandy, and perfect rest. There was no further bleeding, and the recovery was complete in about three weeks.

Dr. Paul F. Mundé reports two cases of dangerous hemorrhage from rupture of the vagina during first coitus, in the *Boston Medical and Surgical Journal*, May 14th, 1885:

CASE I.

In October, 1881, I was called early in the morning to a hotel in this city, to see a lady who had been married on the previous day. I found her in a state of collapse, pale, with occasional momentary loss of consciousness, all due to a violent hemorrhage immediately following the first coition. The husband, a physician himself, had vainly tried to arrest the hemorrhage by compression and persulphate of iron. Inspection showed blood trickling from the vaginal orifice, and a slight rent of the hymen at the left anterior border, which, however, did not bleed; digital examination revealed a vagina distended with coagula, thus indicating that the blood flowed inward, as though from an internal wound. Placing the patient on the left side, I introduced Sim's speculum, cleared the vagina thoroughly of all coagula, and then at once saw blood spurting from a deep fissure about an inch long, which extended inward from the nick in the hymen to the left and parallel with the urethra. Tight tamponing of the vagina with disks of alum cotton, carried down to the very vulva, arrested the bleeding at once and permanently, and no further trouble was experienced. Here really the rent was intra-vaginal, its starting point merely being the hymen.

CASE II.

April 16th, 1883. I was called in the evening to see a lady 22 years of age, married the day before. The messenger said she was bleeding, and I suspected a similar injury to that in the previous case. I found a waxy-looking, evidently very feeble patient, who stated that coitus had been performed but once, toward morning, had been rather painful, that she then went to sleep, and was awakened some hours later by feeling wet about the genitals, and found herself lying in a pool of blood. A physician was sent for, who gave ergot, but made no examination. The patient continued to ooze, and another physician was sent for, who ordered ice to be applied over the abdomen,

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who also made no examination. The hemorrhage continuing, he sent for me. I examined her by gaslight, and could detect no bleeding spot on the hymen. The examining finger found the vagina full of coagula. Through Sim's speculum the vagina was thoroughly cleansed, and a deep rent, fully two and a half inches in length and half an inch in depth, was at once seen in the left vaginal wall, extending from about an inch above the hymen nearly to the cul-de-sac. The edges of the rent were ragged, and its base bruised and torn. A firm tamponade with alum cotton disks effectually controlled the bleeding, and when the patient called at my office, a week later, the wound was in a fair way toward closure.

In neither of these cases did there seem to be a disproportion of the relative organs, nor could I learn that any unusual violence had been used. The vaginas were apparently perfectly healthy, both ladies being young and of good constitution.

In the second case of Zeiss, quoted by Dr. Chadwick, the recent confinement of the woman and the adhesion of the cervix to the lacerated side of the vagina would readily account for the friability of the tissues, as would also the senile atrophy of the vagina in Dr. Chadwick's own case. I recollect reading a similar case in a Canada Medical Journal a few years ago, where a sailor had been away from home for nine years, and on first coition with his wife on his return ruptured her vaginal vault to such an extent that she had to be taken to the hospital (in Montreal, I believe), and came near dying. She had not as yet, if I remember correctly, reached the menopause.

It is strange that two such accidents should have been produced by sailors, whose reputation for abstinence when away from home is not of the best.

The treatment must obviously consist in the tamponade, repeated as long as danger of recurrence exists, or, if the rent is external, where a vaginal tampon cannot well touch it, the deep suture.

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OBITUARY NOTICE OF HORACE FALES, M. D.

By Henry Janes, M. D., Waterbury, Vt.

Dr. Horace Fales was born in the town of Sharon, Vt., on the 16th of February, 1823. He was the son of Aaron and Polly (Spaulding) Fales. Young Horace left the shelter of the paternal roof early in life, supporting himself almost entirely after arriving at the age of 12 years. He left home for good at the age of 14 years, to work on a farm in Sharon. When he was about 20 he went to Meriden, N. H., for the purpose of attending school at the Kimball Union Academy. About 1845 he began to practice dentistry, his uncle, D. R. Spaulding, of Brattleboro, having previously given him some instruction in the art of plugging and extracting teeth. Soon afterwards he commenced the study of medicine under Dr. Spaulding, paying his expenses during his medical course by the profits of his dentistry. He graduated in medicine at Woodstock, Vt., in the class of 1848.

After graduating, he came to Waterbury, where he practiced dentistry for several months, when he left for the purpose of finding a favorable place for a future residence. In March, 1850, he concluded to settle in Middlesex, Vt., where he practiced with success for the following six years. In March, 1856, in order to go into partnership with his classmate, the late Dr. J. B. Woodward, he returned to Waterbury, where he remained until the time of his death.

In May, 1857, he married Miss Henrietta Sheplee, of Waterbury, who still survives him. After coming to Waterbury the doctor did a large professional business, retaining a considerable part of his Middlesex practice for many years. One year during the war he had nearly or quite all the practice in the town of Waterbury, owing to the absence or illness of the other physicians.

On the night of the 15th of May, 1877, he was awakened by his favorite dog to find that his barns were in flames. In a few minutes the fire extended to the house, and, except the furniture of the house, everything was consumed, including horses, horned cattle, swine, etc., etc. The nervous shock to the doctor was considerable, but with a characteristic energy he immediately began to clear away the rubbish and set to work rebuilding. He soon had erected one of the finest and most commodious residences in town.

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On the 10th of December, 1877, he was stricken with hemiparesis of the right side, which was considered of embolic origin. He soon recovered the use of his limbs in great measure, but not fully, and he never regained his former dexterity in the use of his instruments. From this time on he was never quite like his former self again. He realized fully the probability of other attacks following ere long, which would leave him a physical or mental wreck, or a corpse. He had frequent attacks of palpitation of the heart, with a sense of distressing constriction of the chest. His heart became greatly enlarged, but no valvular disease was detectable. He continued to attend to his business, however, until the last few weeks of his life. Several weeks before his death his lower limbs became anasarcous, and for two or three weeks he was unable to lie down, though he continued to drive out nearly every day.

About forty-eight hours before death he suddelny became hemiplegic on the right side, and never spoke afterwards. At first he evidently recognized his attending physician, pressing his hand, and making an effort to speak, but he soon became comatose, and died in the night of Thursday, September 15th, 1882.

Dr. Fales was a good diagnostician, and an excellent general practitioner. He was a cool and careful operator until the first attack of paresis, after which he generally declined performing any important operation.

He was Republican in politics, a man of decided convictions, which he was not afraid to express on proper occasions, though not obtrusively.

His portly form and self-reliant manner were well calculated to inspire the confidence of his patients.

In his domestic and social relations he was genial, and his married life, though childless, was exceptionally free from infelicities.

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OBITUARY NOTICE OF H. H. WHITCOMB, M. D.

By A. L. McMILLAN, M. D., of Barnard, Vt.

Dr. H. H. Whitcomb was born in Barre, Vt., September 2, 1817. When 14 years of age he went to Middletown, Conn., attending the military shool of Capt. Partridge and teaching. Returning to Vermont in 1837, he attended the Norwich University for two years, from thence going to New York city, where he began the study of medicine. He attended several courses of lectures at the College of Physicians and Surgeons, where he would have graduated in medicine but for his poor health, which obliged him for a time to give up his studies. Dr. Alonzo Clark told him about this time that he had phthisis, and would not live long. He returned to his native State greatly depressed in spirit, with the belief that his days on earth were few. He continued to gain health and strength after his return to Vermont, and attended one course of lectures at the Vermont Medical College at Woodstock, where he graduated. He began the practice of his profession at West Hartford, Vt., where he remained four years. In 1851 he removed to South Royalton, where he remained until the time of his decease, and up to the time of his last sickness in the active practice of his profession, which he fondly loved, where he always had a large and extended practice. He had a frail body and was more or less an invalid during all his life. He was a skillful physican, possessing a clear mind, sound judgment, and seldom made mistakes in diagnosis or prognosis, untiring in his efforts to relieve the suffering of his patients, and was always kind and indulgent to the poor and unfortunate, often attending them, furnishing medicine and other necessaries without hope or expectation of any pecuniary reward. During the last 10 years of his life, owing to his poor health and inability to take long rides his practice was more restricted and confined to his office, many of his patients coming from a distance to consult him. He retained until the close of his life his interest in the advance of medical science, and was a frequent attendant of the meetings of the Vermont Medical Society. Like all other men, he had his peculiarities and his faults. He was a man of decided opinions, hasty and passionate, and often petulant and vindictive, and was seldom known to admit that he was in error. He loved his friends and was ever true to them; as to

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his enemies, he never was guilty of hypocrisy to them, never professing or pretending friendship he did not feel. His prayer for them would be that of the Psalmist "That they might speedily be cast into sheol." In politics he was always a Democrat, tried and true, and in his death his party lost a staunch supporter. His religious preference was that of the Protestant Episcopal Church. His aim in life was to deal honorably and justly with all men, as he would that others should do unto him, to do even the same unto them. He died September 16, 1884, of crystitis. He was a man of strict integrity, kind and indulgent in his family which in his death have lost an affectionate husband and father, the profession a worthy member, and his townsmen a citizen whom they all honored and respected.

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In Memoriam.

WARREN WELLS CARPENTER, M. D., West Burke, Vt.

Born in Kirby, Vt., December 13th, 1812; died October 25th, 1885. He graduated at Dartmouth Medical College, Hanover, N. H., in 1839, and practiced medicine from that time to July, 1885. He was an able physician, and respected by those who knew him.

HORACE FALES, M. D., Waterbury, Vt.

Born in Sharon, Vt., Feb., 16th, 1823; graduated at the Vermont Medical College in 1848; admitted to membership in the Vermont Medical Society October, 1870; died September 15th, 1882. A good citizen, an able physician and surgeon.

HENRY H. WHITCOMB, M. D., South Royalton, Vt.

Born in Barre, Vt., educated at Newbury; graduated M. D. at the Vermont Medical College; joined the Vermont Medical Society October, 1854; practiced at South Royalton, Vt., thirty-three years, and died September 16th, 1884.

GEO. M. NOBLE, M. D., Wallingford, Vt.

Born in Tinmouth, September 12th, 1810, and died in Wallingford January 10th, 1885; graduated M. D. at Castleton, Vt., and joined the Vermont Medical Society October, 1858. He never married; was fond of music and of children.

E. A. GREEN, M. D., Richmond, Vt.

Born in Cheshire, Mass., 1821; graduated M. D. at U. V. M., and joined the Vermont Medical Society October, 1880; died suddenly of apoplexy February 7th, 1886, being stricken on Saturday, the 6th, while visiting a patient.

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NOTICE!

"*Resolved*, That each member of this Society in practice be requested to report at the Annual and Semi-annual meeting a case in writing, treated by himself. Said reports to be kept on file, with a view to their publication with the Transactions of the Society."

To stimulate members to a better observance of the foregoing resolution, the best, perhaps, of our standing resolutions for improvement, the publishing committee and Secretary of the Society hereby offer a prize of twenty-five dollars for the year 1886, to the member who shall report in the best manner the most instructive case, in accordance with the above resolution, at the semi-annual meeting, one half; and to the member who shall in like manner report the best case at the annual meeting, one half.

To be determined by the votes of the members present and hearing the cases read.

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H. B.
CATALOGUED.
E. H. B.
8/10/87.

Compliments of Secretary

TRANSACTIONS

OF THE

VERMONT

STATE MEDICAL SOCIETY

FOR THE YEAR 1886.

BOSTON MEDICAL
JUL 12 1887
LIBRARY ASS'N.

PUBLISHED BY THE SOCIETY.

Annual Meeting the first Thursday and Friday after the second Wednesday in October; and the Semi-Annual Meeting the last Thursday and Friday in June, at such place as directed at the preceding Annual Meeting.

MONTPELIER, VT.:
ARGUS AND PATRIOT JOB PRINTING HOUSE.
1887.

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TRANSACTIONS

OF THE

VERMONT STATE

MEDICAL ✵ SOCIETY,

FOR THE YEAR 1886.

PUBLISHED BY THE SOCIETY.

ANNUAL MEETING THE FIRST THURSDAY AND FRIDAY AFTER THE SECOND WEDNESDAY IN OCTOBER; AND THE SEMI-ANNUAL MEETING THE LAST THURSDAY AND FRIDAY IN JUNE, AT SUCH PLACE AS DIRECTED AT THE PRECEDING ANNUAL MEETING.

MONTPELIER, VT.:
Argus and Patriot Book and Job Printing House,
1887.

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NOTE.—Each article published herein stands upon its own merits, as the expression of its Author's opinions, for which the Society does not hold itself responsible.

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PROCEEDINGS

OF THE

Vermont State Medical Society.

1886.

SEMI-ANNUAL MEETING.

The Vermont State Medical Society met in semi-annual session at Burlington, on June 24 and 25. The meeting was called to order in the dining room of the Van Ness House, at 10: 30 A. M., by the President, Dr. D. G. Kemp, of Montpelier. The Records of the last annual meeting were read by the Secretary, and approved.

Dr. Charles Rumford Walker, of Concord, N. H., presented credentials as delegate from the New Hampshire Medical Society.

Dr. Granville P. Conn, of Concord, N. H., an honorary member of this society, was introduced to the members by President Kemp.

Dr. C. F. Camp, of Barre, read a paper on "Prepared Medicines." Dr. A. B. Somers, of Jericho, read a paper on "Dose Dispensing." Both papers were referred to the publication committee. Adjourned until 3: 30 P. M.

At 12: 30 P. M. the society, through the courtesy of the Burlington Medical and Surgical Club, embarked upon the elegant steamer Reindeer, for an excursion upon Lake Champlain. It will long be remembered as one of the pleasantest excursions in which the society has ever participated.

The day was pleasant, the boat staunch and swift, the landscape and scenery constantly changing and beautiful, and the company charming.

President Kemp called the society to order for the afternoon session at 3: 30.

Dr. J. B. Wheeler read a paper on "Cocaine in General Surgery." After discussion, the paper was referred for publication. The subject

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of "Plaster Dressings in Surgery," was discussed by Drs. Richmond, Wheeler, Darling, and Howe, of Hartford, Conn.

Adjourned until 7: 30 P. M.

The society met as per adjournment.

Vice President E. R. Campbell, of Bellows Falls, delivered the semi-annual address, upon "Idiosyncrasies in Medicine." It was a very interesting paper, and the subject was discussed at length by the members.

Dr. M. R. Crain read an interesting paper on "Physics as a basis of Galvano-therapeutics."

The society then adjourned until 10 A. M., June 25th.

SECOND DAY.

Friday, June 25th. Met at 10 A. M.

Prof. W. Oliver Moore, of New York city, presented credentials from the New York State Medical Society. He was heartily received and read a paper on the "Use of the Opthalmoscope in Medicine."

A vote of thanks was unanimously tendered Dr. Moore, and his paper was referred to the publishing committee.

The programme for the annual meeting was reported as follows:

"Alcoholic Ataxia,"	DR. J. M. CLARKE.
"Diabetes,"	DR. S. S. CLARK.
Contrasts in Medicine and the Medical Profession,	DR. L. C. BUTLER.
"Antiseptics in Surgery,"	DR. D. C. HAWLEY.
"Urinary Analysis,"	DR. J. H. LINSLEY.

ATTENDANCE.

DRS. O. F. FASSETT,	St. Albans.
G. E. DUNSMORE,	St. Albans.
RALPH SHERWOOD,	St. Albans.
W. S. BOYCE,	Guildhall.
W. R. PRIME,	Richford.
L. C. BUTLER,	Essex.
E. F. UPHAM,	West Randolph.
S. E. DARLING,	Hardwick.
A. P. GRINNELL.	Burlington.
J. W. BERRY,	Burlington.
J. M. CLARKE,	Burlington.

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L. M. BINGHAM, - - - Burlington.
W. B. GIBSON, - - - - Burlington.
D. C. HAWLEY, - - - - Burlington.
H. C. TINKHAM, - - - - Burlington.
J. H. LINSLEY, - - - - Burlington.
F. R. STODDARD, - - - - Shelburne.
D. G. KEMP, - - - - Montpelier.
G. O. W. FARNHAM, - - - Bristol.
W. G. CHURCH, - - - Winooski Falls.
F. H. CILLEY, - - - - Jericho.
A. B. SOMERS, - - - - Jericho.
B. J. ANDREWS, - - - - Richmond.
S. S. CLARK, - - - - St. Albans.
I. M. BISHOP, - - - - Middlesex.
L. W. ADGATE, - - - - Hardwick.
S. H.GRISWOLD, - - - - Rutland.
C. A. SPERRY, - - - - Quechee.
E. S. ALBEE, - - - - Bellows Falls.
E. R. CAMPBELL, - - - Bellows Falls.
J. D. BREWSTER, - - - - Windsor.
C. M. TERRILL, - - - Townshend.
M. R. CRAIN, - - - - Rutland.
S. H. MORGAN, - - - Ludlow.
A. C. BAILEY, - - - - West Randolph.
G. F. B. WILLARD, - - - Vergennes.
D. F. RUGG, - - - - Hartland.
J. S. RICHMOND, - - - Woodstock.
JAMES CONLAND, - - - Brattleboro.
H. G. HOWE, Delegate, - - - Hartford, Conn.
WILLIAM OLIVER MOORE, Delegate, New York, N. Y.

The following named physicians were elected to membership during the meeting:

Drs. F. A. SMITH, Felchville, Coll. Phys. and Surg., N. Y., 1884.
G. O. W. FARNHAM, Bristol, - - U. V. M., 1884.
GEORGE F. WILLARD, Vergennes, St. Louis Med. Col., 1883.
H. C. TINKHAM, Burlington, - - U. V. M., 1883.
B. J. ANDREWS, Richmond, - U. V. M., 1885.

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L. W. FLANDERS, Brandon, - - U. V. M., 1885.
W. D. BUCHANAN, Cambridge, - U. V. M., 1882.
C. H. PRINDLE, Burlington, - - U. V. M., 1885.
J. W. BERRY, Burlington, - - U. V. M., 1885.
DAMAS CARRIERES, Burlington, Lovelille, Univ., 1880.

On motion, the society adjourned.

J. S. RICHMOND, Secretary.

D. G. KEMP, President.

ANNUAL MEETING.

FORENOON SESSION.

The seventy-third annual meeting of the Vermont State Medical Society, was held at Montpelier, October 14 and 15, 1886.

The Society was called to order at the State House, in the room of the committee on Agriculture, at 10.30 A. M.

Prayer was offered by the Rev. T. P. Frost, of Montpelier. The records of the semi-annual meeting were read and approved.

DELEGATES PRESENT.

Maine Medical Association, - DR. T. A. FOSTER, Portland.
Northern N. Y. Medical Assoc't'n, DR. A. M. PHELPS, Chateaugay.
New Hampshire Medical Society, DR. J. H. CUTLER, Peterboro, and DR. GEORGE COOK, Concord.
Massachusetts Medical Society, DR. C. M. HULBERT, So. Dennis.

REPORTS.

Dr. E. F. Upham made a verbal report as delegate to the American Medical Association.

Dr. S. Putnam, on behalf of himself and Dr. J. S. Richmond, delegates to the Maine Medical Association, made the following report of the 34th annual meeting of that Association, held at Portland, on June 1st, 2d and 3d, 1886:

Mr. President and Gentlemen:

We have to report a fine ride through the White Mountains, presenting scenery beautiful and grand beyond anything east of the Rocky Mountain range.

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Portland is a beautiful city, nearly surrounded by the ocean, bedecked with numerous small islands in that vicinity. The session opened at the City Building on Tuesday, June, 1st, 10 o'clock A. M. The President, Dr. Sumner Laughton, of Bangor, in the chair. Prayer was offered by the Rev. L. H. Hallock. Several reports, etc., were submitted. The Treasurer, Dr. A. S. Thayer, showed bills to the amount of some five hundred dollars paid during the year, and a balance in the Treasury of $721 49, the annual fee being two dollars.

Reports by visitors to the Medical School of Maine, and to the Portland School for Medical Instruction, showed them in good condition, though not apparently crowded by students, like our U. V. M. Dr. A. Garcelon, of Lewiston, was on the programme for Hernia Cerebri, but did not respond, and instead, a paper by Dr. Wheeler, on Faith Cure, was read by the Secretary. The belief that faith might stimulate cell action was admitted.

Dr. Albee reported a case of separation of the lower epyphisis of the tibia, by the fall of a lad some fourteen feet, leaving the bone denuded, bleeding and dirty. After dressing hemorrhage occurred, and the parts were dusted with subsulphate of iron, which effectually controlled the bleeding, and a good recovery occurred, though for a while the bone looked dry and white, but soon it became of a pink color, moist, and covered with granulations.

Dr. S. C. Gordon read a paper on cat gut ligatures for all cases requiring ligatures, having applied them to the pedicle in over forty cases of ovariotomy, and ligating arteries in all cases, never having had a case of secondary hemorrhage. Especially did he and Professor Weeks, of the Portland school, advise their use in cases of ruptured perinæum and cervix uteri, when these existed in the same patient requiring operation. By the use of this ligature both operations can be performed at the same time, and the patient suffer very little during recovery, pass her urine without the catheter, etc.

Afternoon. Introduction of delegates from Medical Societies. President's address on the development of protoplasm, and the wonderful problem of life.

Dr. Crandall read a paper and cases affirming the diagnosis of turburculosis by the presence of tuburcular baccilli, so called.

Dr. Southwick reported the case of a young girl whom he considered anæmic. After a while she was taken with distress at the stomach, and vomiting from taking improper food; gave ipicac, to be followed by powders of calomel and rhubarb. On next visit found patient vomiting .fecal matter, no alvine evacuation having occurred; found a mass at the center of the abdomen not tender or painful. Patient soon sank, and died. The mass on post-mortem examination was found to consist of enlarged mesenterie glands, causing intestinal obstruction by compression without marks of inflammation.

He also stated the case of a boy who ate cherries, and soon went into convulsions, became comatose, difficult breathing occurred, and both lungs were found congested and in a few hours became solidified, it was supposed from injury to the respiratory center, no examination of the brain being allowed. The chest was found as stated, and abdomen showed little morbid appearance.

Dr. Foster, delegate to Texas Medical Society, reported a glorious meeting. Texas physicians being fully up with those of other States, with the social element fully developed.

At the evening session papers were read by Dr. Devoll, of Portland, advocating the employment of women as physicians in hospitals for the insane, and by Dr. Wedgwood on the vomiting of pregnancy.

Your delegates were very pleasantly received, invited out to tea and dinner, and for Wednesday, after the annual oration by F. C. Thayer, M. D., of Waterville, the physicians of Portland gave a banquet. Of this, and of the proceedings, Dr. Richmond writes as follows:

"After you left, the printed programme was carried out. The papers were very good. The oration Wednesday evening was very fine, on "The History and Progress of Medicine;" scholarly, finished, and splendidly delivered. The banquet at the Falmouth Hotel after the oration was elegantly served, and the orchestra first-class. The big dining hall where we took our meals was cleared, promenade, some dancing, and social intercourse very enjoyable. The doctors did everything

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in their power to have a good time. The tables set in the dining room where we first supped. Almost everybody was in full dress, waiters and all. On Wednesday those from abroad were invited out to dinner. I went to Dr. Foster's, and had a good time. The doctors are a high-toned, intellectual, and social set of men. The Secretary, Dr. Charles D. Smith, of Portland, is a live man in the right place. Drs. Gorden, Weeks and Foster, of Portland, and Dr. Garcelon, of Lewiston, are *eminent*. Had you remained, you would have enjoyed Wednesday."

J. S. RICHMOND,
SUMNER PUTNAM.

REPORT OF DELEGATES TO DARTMOUTH MEDICAL COLLEGE.

Your delegates attended the final examination of the graduating class of Dartmouth Medical College, November 15th and 17th, 1885.

The class was small, numbering only fifteen.

The class as a whole appeared well. They seemed to be familiar not only with text book and lecture matters, but showed good training in the exercise of judgment. A noticeable change for the better is the lengthening of the lecture term to twenty weeks. Examination of the class reveals the fact that the Professors keep up with the times in their respective departments, and do not nurse their own notions to the rejection of the teachings of the highest medical authorities.

J. S. RICHMOND. }
O. W. SHERWIN. } Delegates.

TREASURER'S REPORT.

Dr. S. Putnam, Treasurer, made his annual report showing:

Amount of monies received during year, - - - -	$217.76
Amount of monies paid out during year, - - -	126.92
Balance on hand, - - - - - - - - -	$90.84

The chair reported as Committee on nominations, Drs. Holton, Putnam, Upham, Richmond, and Dunsmore.

The following "Reports of cases" were read by the Secretary: "Case of Strangulated Hernia reduced with an Esmarch's Bandage," by Dr. C. H. Perry, of Oneida, N. Y., and a case of "Failure of Respiration after Anæsthesia by Ether," by Dr. F. C. Ainsworth, U. S. Army. Both cases were discussed by the society. Adjourned until 1 o'clock P. M.

AFTERNOON SESSION.

Society called to order at 2 P. M.

The following papers were presented:

"Alcoholic Ataxia" - - - - DR. J. M. CLARK, Burlington.

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"Diabetes" - - - - - DR. S. S. CLARK, St. Albans.
Remarks on "Club Foot," DR. A. M. PHELPS, Chateaugay, N. Y.
Thanks voted.
"Urinary Analysis," - - - DR. J. H. LINSLEY, Burlington.
"Antiseptics in Surgery," - DR. D. C. HAWLEY, Burlington.
"Lacerated Cervix Uteri," - - DR. N. P. WOOD, Londonderry.

Dr. C. S. Caverly, of Rutland, made the following report as delegate to U. V. M.

Mr. President and Gentlemen of Vermont State Medical Society:

As one of your delegates to attend the examinations for the degree of Doctor of Medicine at the University of Vermont, I have the following to report:

I regret that Dr. Greene, your other delegate, was not present, and that I was able to be present but one day, July 15. The presence of Dr. Gibson, of Burlington, added much to my pleasure and the thoroughness with which I was able to examine the few for whom I had time.

The examinations in Surgery and Anatomy were concluded before I reached Burlington, although the Professors of Anatomy offered to recall any of the class, I thought it unnecessary, I heard perhaps six students examined in Physiology. All except one of these showed a good knowledge of the subject and some familiarity with the histological appearance of tisues under the microscope. These students showed very thorough drill. There were three examined before me in Chemistry. None of them knew much about the subject, but from my previous acquaintnance with the Professor in this department I feel warranted in saying that they were exceptional cases. All the candidates had previously been examined on the practical analysis of urine.

I heard three examined in Obstetrics. They all showed a clear and exact comprehension of the subjects upon which they were examined. They were the best posted of any to whom I listened.

In Practice I heard eight or ten examined, and with possibly one or two exceptions they showed a very vague idea of the subject. Of Pathology they knew very little. Perhaps the standing of the whole class in this important department should not be judged by the examinations which I heard. In Materia Medica there were four or five examined by me, and these students were all well posted and showed good drill.

It will occur to you that your delegate could not form a just estimate of the class as a whole by hearing so few examined in each of these five departments.

There were 66 examined in all the branches, and of these 52 passed.

It seemed to your delegate that the examinations could be much more thoroughly and fairly conducted if they were in part at least written, and the examination of the papers subject to competent outside judges.

Incompetent persons are, of course, graduated from most of our medical schools, but some have taken steps in the direction of raising the standard of scholarship, and placing more stringent guards over the entrance to our profession. The University of Vermont is old enough, has students enough, and sufficient prestige to take steps in the same direction. The bettering of the condition of our profession, and elevating the standard of scholarship in our medical college are what we all desire. One is the end, the other the means.

It is the old story—too poorly educated men are admitted to our ranks, and this over-production and poor quality must continue until this check is put upon it.

If you will permit me in this connection, I would like to make a suggestion in regard to the relation of this society to the medical department of the University of Vermont. The members of the profession in this State should have a united interest in some medical college, and this naturally centers in the only medical col-

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lege we have in the State. While the majority of the students are necessarily from other States and counties, the college needs the confidence and support of the profession of Vermont, and of this society as its representative, for its complete success.

It is obviously impossible for one or two delegates to attend the examinations at each commencement, and hear all examined in all branches. Under the old regime the process of sending delegates is a farce. Either more delegates should be sent, or it is useless to send any.

If it is the mutual wish of the Faculty of the college and this society that members of this society should attend the examinations for the purpose of gaining an intelligent idea of the efficiency of the instruction and the competency or incompetency of each candidate, a change is certainly needed. I would suggest that enough delegates should be sent so that every student may be examined by them in all branches. And if the Faculty really wish for the co-operation and endorsement of this society, they will allow these delegates a voice in deciding who should receive degrees.

I need not apologize for making this suggestion. It is not made in a meddlesome spirit or one of fault-finding. It is simply made with the hope of rescuing this time-honored custom of sending delegates from the meaningless formality into which it has fallen.

In conclusion, I would acknowledge the uniform courtesy with which I was received by each member of the Faculty, and the willingness exhibited by all to allow me to participate in the questioning of the candidates.

C. S. CAVERLY, M. D.

Adjourned to 7:30 P. M.

EVENING SESSION.

Meeting called to order at 7.30 P. M., Vice President E. R. Campbell in the chair.

The annual address was delivered by President D. G. Kemp, of Montpelier.

Dr. N. P. Wood reported a case of "anæmia." Discussion.

Dr. S. Putnam reported case of "Erysipelas." Discussion.

Dr. Camp, of Barre, reported case of "Ligature of left femoral artery and vein."

Dr. Richmond and Dr. Upham were by request excused from acting on nominating committee, and Drs. Wood and Rugg appointed to fill the vacancies thus caused.

On motion, the Society adjourned until 9.30 A. M. next day.

SECOND DAY.

OCTOBER 15.

Met as per adjournment.

OFFICERS ELECTED.

President, S. T. BROOKS, - - - - -	St. Johnsbury.

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Vice President, R. T. JONHSON, - - - - - West Concord.
Secretary, D. C. HAWLEY, - - - - - - Burlington.
Treasurer, S. PUTNAM, - - - - - - Montpelier.
Auditor, C. E. CHANDLER, - - - - - - Montpelier.

BUSINESS COMMITTEE.—D. C. Hawley, Burlington; F. R. Stoddard, Shelburne; L. M. Bingham, Burlington.

PUBLICATION COMMITTEE.—S. Putnam, Montpelier; C. M. Chandler, Montpelier; D. G. Kemp, Montpelier.

LICENSE CENSORS.—S. T. Brooks, St. Johnsbury; A. B. Somers, Jericho; E. S Albee, Bellows Falls.

COUNCILLORS.

M. H. EDDY, - - - - - - Addison County.
H. S. BROWN, - - - - - - - - Caledonia.
- - - - - - - - - Essex.
F. A. LaDUE, - - - - - - - - Grand Isle.
A. C. BAILEY, - - - - - - - - Orange.
- - - - - - - - - Rutland.
JAMES CONLAND, - - - - - - Windham.
LYMAN ROGERS, - - - - - - - Bennington.
F. R. STODDARD, - - - - - - - Chittenden.
E. M. BROWN, - - - - - - - - Franklin.
JOEL ALLEN, - - - - - - - Lamoille.
L. J. LETOURNEAU, - - - - - - - Orleans.
C. F. CAMP, - - - - - - - - Washington.
J. D. BREWSTER, - - - - - - - Windsor.

DELEGATES.

American Medical Association.—S. H. Griswold, M. R. Crain.
Maine Medical Association.—J. H. Linsley, J. H. Woodward.
New Hampshire Medical Society.—F. H. Cilley, H. T. J. Howe.
Massachusetts Medical Society.—D. G. Kemp, N. P. Wood.
Rhode Island Medical Society.—C. L. Allen, C. W. Brigham.
Connecticut Medical Society.—C. W. McClearn, John Avery.
New York State Medical Association.—L. M. Bingham, C. M. Ferrin.
Northern New York Medical Association.—A. P. Grinnell, J. B. Wheeler.
Connecticut River Valley Medical Society.—F. F. Chaffee, D. C. Hawley.
White River Medical Association.—E. S. Munger, Deane Richmond.
White Mountain Medical Society.—George Foster, H. H. Howe.
Dartmouth Medical College.—A. B. Bisbee, H. D. Holton.
Medical Department U. V. M.—To be appointed by the President.

A paper entitled "No Code", by Dr. O. W. Sherwin, was read by the Secretary.

MEMBERS ELECTED DURING THE MEETING.

Dr. J. H. WOODWARD, Brandon, Coll. P. and S. New York and U. V. M., '82.
P. E. McSWEENEY, Burlington, - - - - U. V. M., '86.

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H. L. GALE, Barre, - - - - - - U. V. M., '86.
C. J. ALLEN, Waitsfield, - - - - - U. V. M., '84.
A. I. MILLER, Brattleboro, - - - - -
W. H. VINCENT, Orwell, - - - University of New York, '84.
F. D. STAFFORD, Whitingham, - - - - U. V. M., '78.

REPORT OF LICENSE CENSORS.

The following persons have been granted licences during the year:

I. M. BISHOP, M. D., - - - - - - Middlesex.
SUMNER DARLING, M. D., - - - - - Newbury.
G. F. B. WILLARD, M. D., - - - - - Vergennes.
ANTONIE ELIE, M. D., - - - - - - Island Pond.
H. W. McGOWAN, M. D., - - - Stanstead Junction, P. Q.
CHAS. D. BALL, M. D., - - - - Stanstead Plain, P. Q.
C. A. A. BOISSOUETTE, M. D., - - - - - Burlington.
SAMUEL PATENAUDE, M. D., - - - - - Winooski.
JOHN B. WHEELER, M. D., - - - - - Burlington.
LOUIS HAZEN, M. D., - - - - - - Burlington.
H. C. TINKHAM, M. D., - - - - - - Burlington.
WM. B. GIBSON, M. D., - - - - - - Burlington.
P. E. McSWEENEY, M. D., - - - - - Burlington.
FREDERICK W. COMINGS, M. D., - - - - Johnson.
H. S. CARVER, M. D., - - - - - - Marshfield.

Dr. Hoisington, who was a member of the board, has made no report as to the disposition of the licences which were sent to him. He has removed from the State.

D. F. RUGG,
D. C. HAWLEY, } *License Censors.*

ATTENDANCE.

JOHN H. CUTLER, M. D., Delegate, - - - - Peterboro, N. H.
GEORGE COOK, M. D., Delegate, - - - - Concord, N. H.
C. M. HULBERT, M. D., Delegate, - - - - So. Dennis, Mass.
T. A. FOSTER, M. D., Delegate, - - - - Portland, Me.
A. M. PHELPS, M. D., Delegate, - - - - Chateaugay, N. Y.
D. G. KEMP, M. D., - - - - - - Montpelier.
S. PUTNAM, M. D., - - - - - - - Montpelier.
C. E. CHANDLER, M. D., - - - - - Montpelier.
C. M. CHANDLER, M. D., - - - - - Montpelier.
O. F. FASSETT, M. D., - - - - - St. Albans.
S. S. CLARK, M. D., - - - - - - St. Albans.
GEORGE DENSMORE, M. D., - - - - St. Albans.

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C. S. CAVERLY, M. D.,	Rutland.
M. R. CRAIN., M. D.,	Rutland.
C. L. ALLEN, M. D.,	Rutland.
H. S. BROWN, M. D.,	St. Johnsbury.
S. T. BROOKS, M. D.,	St. Johnsbury.
C. W. McCLEARN, M. D.,	Williamstown.
E. R. CAMPBELL, M. D.,	Bellows Falls.
E. S. ALBEE, M. D.,	Bellows Falls.
E. F. UPHAM, M. D.,	West Randolph.
LYMAN ROGERS, M. D.,	Bennington.
H. D. HOLTON, M. D.,	Brattleboro.
J. AVERY, M. D.,	Wallingford.
L. C. BUTLER, M. D.,	Essex.
HENRY JANES, M. D.,	Waterbury.
H. T. J. HOWE, M. D.,	Waitsfield.
W. S. HOPKINS, M. D.,	Vergennes.
E. B. WATSON, M. D.,	Willlamstown.
A. L. BINGHAM, M. D.,	Williston.
C. J. ALLEN, M. D.,	Waitsfield.
B. J. ANDREWS, M. D.,	Richmond.
W. G. CHURCH, M. D.,	Winooski.
GEORGE C. BRIGGS, M. D.,	Burlington.
J. H. LINSLEY, M. D.,	Burlington.
A. P. GRINNELL, M. D.,	Burlington.
J. M. CLARKE, M. D.,	Burlington.
F. R. STODDARD, M. D.,	Shelburne.
H. L. GALE, M. D.,	Barre.
D. F. RUGG, M. D.,	Hartland.
N. P. WOOD, M. D.,	Londonderry.
C. M. FERRIN, M. D.,	Essex Junction.
P. D. BRADFORD, M. D.,	Northfield.
H. A. CUTTING, M. D.,	Lunenburgh.
C. W. BRIGHAM, M. D.,	Pittsfield.
F. H. CILLEY, M. D.,	Jericho.
A. B. SOMERS, M. D.,	Jericho.
C. F. CAMP, M. D.,	Barre.
C. C. PERRY, M. D.,	Bethel.
C. C. SMITH, M. D.,	Gaysville.
J. S. RICHMOND, M. D.,	Woodstock.
D. C. HAWLEY, M. D.,	Burlington.

Semi-annual meeting to be held at St. Johnsbury. On motion, the society adjourned.

S. T. BROOKS, M. D., Pres. D. C. HAWLEY, M. D., Sec.

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IDIOSYNCRASIES.

By Edward R. Campbell, M. D., Bellows Falls, Vt.

I have chosen for the subject of this evening's remarks the idiosyncrasies of patients, and their relation to the medical profession. And I hope that the discussion following the paper will bring out the personal experience of many present, for in this way I am confident that we shall learn much of interest and profit to all.

Dunglison defines an idiosyncrasy as "A peculiarity of constitution in which one person is affected by an agent which in numerous others would produce no effect."

Ord says that the term, like many others used in science, has a more restricted application than its etymology would indicate. From meaning the personal constitution of an individual, it has come to mean any peculiar and not obviously correlated reaction against external influences exhibited by any individual.

It is not to be confounded with "constitution," which is the foundation of the individual, his powers, capacities and organization; nor with temperament, which denotes the correlation of powers and tendencies with the physical conformation of the individual, which has therefore a generic or race application, and which is defined by some writers as the "general form" of the man.

Commonly any single peculiarity of a person is spoken of as "an idiosyncrasy," so that one individual may in this sense of the word manifest several idiosyncrasies or "personal attributes." Gross speaks of the subject as "literally a peculiarity of constitution or a state of the general system in which certain articles, whether taken as food, drink, or medicine, produce an effect altogether different from what they do under ordinary circumstances."

An idiosyncrasy may be either of a mental or physical nature, and may be acquired, or have existed from birth, and may be either permanent or temporary in its character. Claude Bernard and others regarded such conditions as "peculiar affections of the nervous system;" but Ord tells us that "a review of the phenomena admitted to belong to the class will be found to compel us to recognize in many cases a more comprehensive relation, involving the whole organism, or parts

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of it, other than the nervous system. My own opinion is that we know but very little, if anything, about the origin of these peculiar conditions of the individual.

Let us take, for example, many of the articles of diet in ordinary use, which in the vast majority of persons are eaten with the utmost impunity, if not with positive benefit, and see how curiously in exceptional cases they affect the individual. Lobster and other varieties of shell-fish are prone in some individuals to produce uticarea, and even the most violent vomiting and purging. In fact, I can speak from *bitter* experience of the nauseous effect of lobster. When a lad of some dozen years I ate heartily of what some term the "luscious lobster," but an ever to be remembered bitter nauseous night followed, and since that time my stomach has refused a resting place to lobster in any form. A friend and brother physician tells me that he is unable to eat oysters without suffering severe abdominal pain and vomiting: that he has tried them many times, and in their various forms, but always with the same results, and he mentions a lady patient of his who cannot drink coffee without producing a frequent and troublesome desire to void urine. Another professional brother tells me that he cannot eat clams without producing symptoms of distress. Thus we can easily prove by cases occurring to individual members of the medical profession that shell fish generally are particularly liable, to say the least, to excite unpleasant consequences. Prof. Gross speaks of a young lady patient of his who could not eat eggs, no matter how prepared, without being immediately seized with vomiting. Another case, of a gentleman who was always copiously purged after eating soft boiled eggs, although when hard boiled they always agreed with him. He also speaks of one of his own grandchildren as being "unable to eat strawberries without being instantly seized with some pain in the stomach," while other writers speak of these berries (so extremely palatable to most of us) as being to "a few persons a most deadly poison, producing symptoms of intense nervous shock." A patient of mine, now past sixty years of age, tells me that from boyhood the smell of oranges has nauseated him, while an eminent writer speaks of a patient of his that could not take a cup of green tea without being promptly and copiously purged; it usually operated on the bowels in from fifteen to twenty minutes after it was taken, bringing away watery evacuations, accompanied with more or less griping; black tea produced no such effect as he had

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experienced from the green tea from his earliest recollection. In two other cases mentioned the use of green tea, even in very small quantities, invariably acts as a powerful diuretic, causing an abundant secretion of urine, with a frequent desire to void it for a number of hours.

Dr. Prout mentioned a case of a man who could not eat mutton, no matter how it was disguised; he always promptly detected it, and it invariably caused violent vomiting and purging. That rice will occasionally poison is proved by the following cases reported by Mr. Nunn. J. M. cannot eat rice without extreme distress. On one occasion, when at a dinner party, he felt the symptoms of distress that he had before experienced after eating rice, and was as usual obliged to retire from the table, although he had not partaken of any dish ostensibly containing rice. It appeared on investigation that some white soup with which he had commenced his dinner had been thickened with ground rice.

Another gentleman who could not eat rice "without being suffocated," took luncheon with a friend. The fare was simple—bread, cheese and *bottled* beer. On the usual symptoms of rice-poisoning seizing him, he informed his friend of his peculiarity of constitution. The symptoms were explained by the circumstance of a few grains of rice having been put into each bottle of beer, for the purpose of exciting a secondary fermentation.

Still another gentleman cannot eat figs without experiencing a most unpleasant formication of the palate and fauces; the fine dust of split peas also produces the same sensation.

Equally curious is the case of a lady, in which the taking of honey of any kind, and especially honey-comb onto the stomach, causes swelling of the tongue, frothing of the mouth and blueness of the fingers.

I find mentioned in a recent number of the "Therapeutic Gazette," some interesting cases of idiosyncracies, some of which I take the liberty to quote; among others a very curious one is spoken of where the patient, a lady, is thrown into fainting fits by eating the smallest piece of butter. She has been tried by those who thought her condition was purely imaginatiive, by placing a small piece of butter in a dish of mashed potatoes and giving her a table-spoonful after telling her that there was no butter in it. In a few moments she fell off her chair in a condition of swooning.

Another case, which with those just mentioned, are well suited to prove the truth of the old maxim, that "What's one man's meat is another's poison," occurred in the practice of my father some years ago.

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The patient was a farmer in middle life, who could not handle in any way that usually innocent and nutritious grain, rye, without producing eczema, usually of severe type. Even in passing a field of the ripening grain, when the wind was blowing toward him, these symptoms would appear, nor could he carry a bag of it to mill, unless it was covered with several blankets, without producing like symptoms.

A lady whom I attended in miscarriage at nearly five months, told me that during the first three she was very severly troubled with the vomiting of pregnancy. All the usual remedies were tried without the least benefit, and nothing in the form of food or medicine would stay on her stomach. And her condition really became alarming. She at last felt a strong desire for fried sausage, and her medical attendants, in desperation, supposing that she would immediately throw it up, allowed her to try the sausage. Contrary to all expectations the sausage staid down, the vomiting stopped, and the patient improved on her sausage diet for several weeks. Question. Should fried sausage be added to our list of remedies in the vomiting of pregnancy?

As an example of the sometimes very peculiar effect of absorption by the skin, or of other absorbents, might be mentioned the poisonous properties of the so called "poison ivy." While in some persons its action is almost if not quite inert, on others it produces symptoms truly frightful, and in the majority of people, perhaps, symptoms of an erysipelatous character, with vesications, appear on exposure to its influence.

While cases similar to many of the preceding might be almost indefinitely multiplied, let us briefly speak of some of the idiosyncrasies produced by the sense of smell. Thus, some well authenticated instances of faintness induced by the odor of roses and apples are recorded; while a distinguished practitioner mentions an habitual asthmatic patient, thirty-five years of age, who could not enter a room where feathers were without instantly experiencing an aggravation of his pulmonary affection. To provoke this effect it was not necessary that he should see, or even that the smell of the feathers should be perceptible; led blindfolded into an apartment thus furnished, he was at once conscious of their presence, and was immediately obliged to retreat.

Convulsive spasm may be excited by the odor of musk, and asthma produced by the inhalation or odor of ipecacuanha. We also find mentioned the case of a medical practitioner in whom the perception of this substance is so keen that if he be in the third story of a house on the

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floor of which an ordinary dose of the article is compounded, he is instantly seized with spasmodic cough and wheezing.

The *Therapeutic Gazette* records the case of a well known practitioner in Philadelphia who is most violently affected by the odor of hyacinths. A single spray of hyacinth, put into his room without his knowledge, has been known to cause in a few moments sick stomach, followed by violent repeated retching and great general depression, amounting almost to syncope. And it would appear as though if he were shut up in the room with a single hyacinth bulb in full bloom, it would cause his death. A curious feature in this case is that the emanations will produce so much disturbance of his system without his perceiving the odor. Another case is mentioned where a physician in one of the hospitals was forced to resign because the moment he went to work in the surgical wards he became afflicted with a crop of boils which would have disrupted the heart of Job with envy. It was only years afterwards that the unfortunate doctor discovered that the boils were produced by the emanations of turpentine, which was at that time used in the wards for cleaning off the skin of patients to which the adhesive plaster had remained.

Vision may also be the channel through which an idiosyncrasy shows itself; for instance, some individuals faint at the sight of blood, or even beet root is related by Prochaska as sometimes producing it. And it seems to me that extreme fear of an operation or pain may at least sometimes be classed under this head, for how else can we account for the following cases: Cazenær relates a case that occurred in his practice in 1866 of a man sixty years of age who was about to undergo the bilateral operation for lithotomy. The surgeon was on the point of introducing the staff, when the patient, who had exhibited entire calmness and serenity during the preparations, was observed to become pale and faint, and in the course of ten minutes, in spite of all that could be done, he expired.

When the nervous syncope seized him the instrument had not yet even touched him. Civiale mentions an instance of an old man, suspected to be laboring under stone in the bladder, who was about to be sounded, but died of terror almost before the instrument had touched the meatus. And Perrin refers to the case of a soldier twenty-five years of age affected with phimosis, who, reluctantly consenting to an operation, no sooner saw the surgeon's knife than he fainted and instantly expired. Now while we know that these are the exceptional

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cases among millions of successful ones, it shows us conclusively what a *vast* influence the mind has over our mere physicial functions and well being.

Indiosyncrasies in the use of drugs certainly have a special interest for the physician. One of the most common, perhaps, is the peculiar effect of opium in its various forms. While we all know that in the great majority of cases it acts as a pain mitigator, and usually produces quiet and sleep and restrains the action of the bowels, cases from the highest authorities are recorded where the very opposite effects have resulted; where in fact a dose of the drug in any of its forms produces severe gastric pains, or perhaps vomiting or purging. Dr. Gross mentioned a former patient of his who could not take an ordinary dose of laudanum without being copiously purged. Others vomit and are nauseated for many hours. In still others, a very distressing itching and perhaps delirium follows the dose.

Another very troublesome, if not serious, idiosyncrasy to both physician and patient is the susceptibility to the action of mercurials which some people possess, sometimes a fraction of a grain of calomel causing a really serious salivation. One authority says he has noticed the curious circumstance that blue mass was tolerated where the system exhibited the most violent reaction against the mild chloride. He also mentions a case where morphine was given to relieve pain in the case of an office patient; contrary to all expectations, a violent diarrhœa was produced by the alkaloid, which was checked with difficulty. In this case the peculiarity might have been inherited, as the father of the patient was accustomed to use habitually paregoric as a laxative. A teaspoonful taken at night would always produce soft evacuations in the morning. On the other hand, cases are also reported where so powerful a cathartic as croton oil, used in twenty drop doses, failed to evacuate the bowels.

Since writing the preceding, I find a case reported by Dr. Moeckel, of Nuremburg, in which he speaks of quinine as causing a rise, instead of a reduction, in temperature. In this particular patient, after taking three grains of quinine for malaria she had a chill and a rise of temperature up to 104.5° F., and it is stated that this increase of temperature occured every time quinine was administered.

Another case of quinine idiosyncrasy is reported in the New York *Medical Journal*, occurring in the practice of Katzenback, which I quote in full. "A nurse-maid for whom he had prescribed quinine in the

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form of two grain pills, early in the day, went to his office at 5:45 P. M. highly excited and in great distress. Her face was flushed, and her hands and arms were red. She complained of giddiness, mental confusion, and inability to remain still. She had taken one pill at five o'clock and in thirty minutes experienced, in her own words, 'burning pain in her stomach and prickly heat all over.' Her mouth and the parts behind the ears were very sore; there was great pain in the top of the head and in the lower part of the body and thighs; the breasts were swollen and painful; her pulse was rapid and not strong. No examination was made. She was advised to go home and to bed at once. Sodium salicylate and sodium bromide were ordered in doses of five grains each, to be taken every hour, and the patient was requested to send word in the evening if she was not relieved." The writer did not see her until next day. She further said in her description, that on her way from his office to her home she could scarcely walk straight, and feared she might be seen by a policeman and arrested for intoxication. She took one dose of the salicylate and bromide, but shortly vomited it. The burning pain left the stomach; the tongue and throat felt swollen, the pain increased in the head, and she had a feeling of being smothered. At 7 P. M. she fell on the floor unconscious; when consciousness was regained she took another dose of the salicylate and bromide. Her legs were painful and heavy, refusing to support her. A cold perspiration came on, which continued some time, during which her bowels moved. A third dose was afterwards taken. At 10 P. M. the pain had left her head and extremities, but fullness of the head remained. She slept off and on from this time till morning, and awoke feeling well. Her urine was retained from the time of taking the quinine until the next morning.

She had a similar experience in England a few years ago from a dose of five grains, and was reluctant to take what was ordered, and only did so after considerable persuasion by a friend.

Did time permit, instances of the unusual effects of drugs might be almost indefinitely extended, and undoubtedly every physician present could relate from his own practice cases where in certain patients drugs have acted very differently from their action in the great majority of people. And especially is this true of the action of drugs on children. With them I think we see most frequently the two extremes in regard to the resistence or *non* resistance to the ravages of disease, for how else can we account for one family of children, or one member

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of that family of children, readily yielding to some slight ailment quickly thrown off by the majority of children, and expiring, in spite of treatment, almost as soon as any dangerous symptoms show themselves, while another child clings to life day after day, when from the dread form and severity of the disease both parents and physicians have almost ceased to hope from hour to hour, and finally recovers to the joy of all.

Happy is the physician whose patients show a strong indiosyncrasy to resist disease. A very marked case of an indiosyncrasy of the osseous system, or perhaps more definitely speaking, of "Fragilitas Ossium," occurred in a young woman in Westminister, and was reported quite fully to the Conn. River Valley Medical Association by my friend, Dr. A. P. Richardson, of Walpole, N. H., from whom I quote. The patient was a young woman, aged twenty-two, and weighing two hundred and ten pounds. He was called to set a fractured femur, broken at the junction of the middle and upper third, the patient having made a misstep in alighting from a buggy. The doctor was informed that this was the *thirteenth* time that she had suffered a fracture of the thigh. There was about four inches shortening of the leg, and the following history of this somewhat remarkable patient was obtained from herself and mother. She had sores on her neck and face much of the time until five years old, and had shown a little deformity in the cervical region since the age of seven. At one time she nearly lost the sight of one eye by an ulcer. At eight years of age she broke her thigh bone for the first time, by falling over a sap bucket. Union had taken place at the end of six weeks, when she fell out of a chair, and reproduced the fracture, which again united in due time. A year afterward she fell from a step, and again fractured the unlucky bone. At twelve years of age she suffered the same lesion by breaking through the snow crust. At about this time the catamenia appeared, and she suffered from hysteric spasms. Ten months afterwards, the spasms being severe, she struck the afflicted member against its fellow, and a fractured femur was the result. Four months elapsed, and the same accident again occurred. It was at this time that she first dislocated a shoulder, it being done by a spasmodic action of the muscles, which accident has occurred to her about one hundred times in the ten years that has since elapsed, sometimes it being the right shoulder and sometimes the left. This accident has occurred once a week during a year's time. It was often replaced by physicians, and sometimes by the mother or other friends.

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Her thigh was again broken at the age of fifteen years, by a little child, three years old, falling upon it. One month afterwards she broke the opposite thigh by spasmodic muscular contraction, and about the same time she fractured the right humerus; also a rib in the same manner. The same season one of the bones of the leg suffered a "solution of continuity," it being run against by a small dog. Four months ensued, and the thigh was again broken. Not long after it was twice fractured, once by the other simply dropping upon it. Once her physician dislocated the head of the radius in attempting to reduce the shoulder. The jaws are firmly set together for hours and even days. Again her sight leaves her temporarily. Her teeth are mostly good and firmly set in their sockets, so that extraction of a molar requires more than ordinary force. Her general health is quite good, so that she does housework and sewing when not engaged in healing fractures and dislocations. Despite all her numerous fractures and dislocations, I believe the patient is still living, and the mother of two or three children, who as yet seem to inherit none of her fragile peculiarities.

Now the thought occurs to me that if the trustees would direct that the medical department employ her, if her services could be obtained on reasonable terms, they would not only have a typical case of "Fragilities Ossium" constantly on hand, but Dr. Wright , now Prof. of Surgery, might frequently demonstrate to his class of embyro surgeons, not only the various methods of *reducing* but also of *inducing* fractures and dislocations.

I think it perfectly proper to speak of some individuals as affected with *imaginary idiosyncrasies*. Such persons are quite frequently met with, who declare that certain medicines, foods or substances swallowed disagree with them, but on careful investigation their statements are found to be incorrect, and perhaps due to the prejudices of the patient. At times these fancies are of the greatest importance, and in some instances all the sagacity and tact of the practitioner is of no avail, and a fatal result occurs through the influence of the mind or imagination on the vital organs of the individual. This is well illustrated in the case of a clergyman who, while taking wine in company with friends, accidentally swallowed a bit of sealing wax. One of his companions, seeing him alarmed, called out to him that "it would seal up his bowels." From that time he became despondent, and in a day or two refused all nourishment. When asked his reason, he replied that "nothing would go through him." His physician induced him to take a cathartic, which

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operated freely; nevertheless he could not be convinced that his body was not hermetically sealed, and, with the exception of a little broth, he refused to take anything, and died in consequence.

From such cases as the above we readily come to the conclusion that cases of imaginary idioyncrasies are often the most difficult to treat, and frequently cause the medical attendant much annoyance and trouble, even where the result is not fatal, as in the above mentioned case.

Another large class of cases which we, as physicians, have to deal with, are those patients affected with mental idiosyncraies, or peculiarities of mind. And who of us are wise enough or skillful enough to diagnose between a case of extreme mental idiosyncrasy and of commencing insanity? Indeed, with so many kinds of monomaniacs as our friends the specialists in mental diseases give us, it would certainly be very confusing to the general practioner in many cases. But we all have much to do with mental idiosyncrasies of a lighter type, and I doubt whether at times we recognise and pay that attention to them which their importance demands. Such cases require mental medicine, and I think we are often at fault for not giving it in liberal doses and a sufficient variety of forms. For instance, take a patient with a weak physical organization, and let some deep and sudden affliction, as the loss of some near and dear friend, come to him, and no drugs can benefit him one-half as quickly or as permanently as to assist him to keep his mind, and hands if need be, steadily engaged in some useful and congenial work. I think that none of us will doubt, even in such extreme instances where the patient is indeed plunged into the deepest melancholy—even to the verge of suicide—by his troubles, that through the agency of well directed change of scene, work and study, the troubled mind can be relieved, our patient gaining at the same time general vigor, the power of self-control, and buoyancy of spirits. Now while the above supposed case is not an instance of an idiosyncrasy, for such trouble and grief is common to all mankind in a greater or less degree, if such real grief can be assuaged by mental means, how much more so ought we to find benefit from similar treatment in imaginary mental troubles and peculiarities.

Now if you will allow me to speak of one or two cases of what I shall term physiological idiosyncrasies, I will draw this already somewhat lengthened record of cases to a close. They well illustrate the extremes of very early and very persistent menstruation, the first reported by a Dr. Mengus in a French medical journal, and the latter by Dr. Emmet.

The little girl commenced to menstruate regularly when only twenty-

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three (23) months old. She is described as a well formed and fully developed for a child of her age . The menstrual flux proceeded from the genital organs; there was neither lesion, neoplasm nor a foreign body to explain this. The hymeneal membrane was absent, and examination could extend to the crevix uteri, which was excessively developed for a child of that age. After three days the catanunial flow stopped, and reappeared six weeks later on. The child presented signs of puberty, which increased after the second menstruation. The breasts were quite well developed, the skin lost its satin-like surface, peculiar to children, and presented the rougher one characteristic of puberty in young girls. Loss of blood weakened the child at first, but a few times restored her normal condition. She continued to menstruate regularly, and retained perfect health. She is now three years and a half old, both precocious and intelligent, and in height as tall as the average child at seven.

On the other extreme Emmet speaks of a lady of 70 who had menstruated regularly every month since the age of 16, except when she was pregnant and during a certain interval after she had reached the age of forty-five or fifty. Her daughter, who was aged fifty, also had a regular monthly flow. The mother seemed in perfect health, and had been a widow for thirty years.

He regarded the case as a very unusual one.

And now what practical lessons can we draw, if any, from this long essay of cases occurring, many of them, in the persons of physicians themselves, while those occurring elsewhere are carefully reported by practitioners in whom we have the utmost confidence. While these reported are, of course, the rare and infrequent cases, what a vast number of lesser peculiarities or indiosyncracies we all see in our every day practice. Indeed, the expression that a certain medicine "worked like a charm" in one case is no exaggeration, while in another patient the same remedy given under seemingly similar conditions might cause an altogether different effect. In my opinion the preceding cases teach conclusively the folly of a merely routine treatment. We should make each individual case a special study, and the possibility of certain foods or medicine causing peculiar symptoms, should any arise, should be taken into account, and at once investigated. Again, such cases furnish the strongset kind of argument in favor of the retention of the family physician as the medical adviser of the family, instead of consulting a specialist, and a new one every time a different organ or sys-

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tem is injured or diseased. Now I would not be understood as being in the least opposed to that branch of the profession termed specialists. On the contrary, I think that in many cases they are a positive benefit to the general practitioner and mankind, but I believe that in most cases they can benefit the patient *more* by advising with and helping the family physician, than in assuming the care of the case; for I must say that they in at least some cases seem to need the restraining influence of the family physician, lest they mount their hobby and allow it to run away with them, to the oftentimes serious determent of the patient.

But seriously, would not the family physician be in a better position to judge whether the patient had some peculiarities in regard to the use of food or medicine from his general attendance when any member of the family was sick, than any specialist who was called in only occasionally, when some organ, the treatment of which he had made a special study, was diseased.

In closing, let me say that if what has been said shall lead to a discussion of idiosyncrasies, and bring to our knowledge cases that will help us all in treating future patients whose peculiar symptoms would, perhaps, otherwise have remained obscure, the main purpose of this paper will have been accomplished.

THE OPHTHALMOSCOPE IN GENERAL MEDICINE.

BY WILLIAM OLIVER MOORE, M. D.,

Professor of the Diseases of the Eye and Ear in the University of Vermont.

"In the whole history of medicine there is no more beautiful episode than the invention of the ophthalmoscope, and physiology has few greater triumphs. With it, it is like walking into Nature's laboratory and 'seeing the Infinite in action,' since by its means we are enabled to look upon the only nerve in the whole body which can ever lie open to our inspection under physiological conditions, and to follow in a transparent membrane an isolated circulation from its entrance into the eye through the arteries to its exit in the veins."†

† Text-book on Ophthalmoscopy, by Edward G. Loring, M. D. New York, 1885.

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By its means we are able to study daily morbid changes in every form and variety, from the slightest congestion to the most flagrant inflammation, and may often through its agency obtain the first warning of disease in some distant organ: as the heart, the kidneys, the spleen, the brain, and the spine.

Thus has the invention of Helmholtz, in 1851, given to us a most powerful aid to diagnosis, and placed the ophthalmoscope as one of the foremost instruments of precision in physical diagnosis.

At the same time it is but just to remember that it is not a cerebroscope in the sense that so many writers on neurology would lead us to believe.

Before describing the changes found in the interior of the eye from general disease, it will be well to consider the usual appearance of the fundus of the normal eye. The most prominent and conspicuous feature of the fundus is the beautiful red background, in the centre of which is the round white optic nerve entrance from the midst of which issue the retinal arteries and veins on their way to supply the delicate tissue of the retina. The average diameter of the optic nerve is 1.4 mm, and as it is enlarged by the ophthalmoscope in the emmetropic eye 14⅓ times, it would appear to the eye of the observer as though 20 mm in size. The general appearance of the vessels as they come into retina are a superior and inferior vein. Frequently, however, this arrangement is changed, and a variety of distribution is noticed; a light streak is seen on the arteries and veins running in a longitudinal direction; it is of a pale straw color, and covers nearly one-third of the diameter of the vessel. It is generally more brilliant, broader, more sharply defined, and of a lighter color upon the arteries than the veins.

To the temporal side of the optic nerve entrance may be seen by careful observers the macula lutea, which is situated usually about two diameters of the nerve distant. The background of the normal eye varies in color, according to the pigmentation of the body. If the observed is a blonde, the retinal hue will be more pink; and if a brunette, red or of a darker color; so also does its texture, in some the fundus having a soft appearance like the nap on velvet, and again having a hard, flat look.

This difference in the appearance of the texture of the fundus is probably due to the varying degrees of pigment in the choroid.

The variations in appearance of the fundus of the eye are as unlimited as the number of persons examined. Still, with this variety of

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color and detail there is a general appearance to the normal fundus which enables the observer, after practice, to distinguish the healthy from the abnormal, whether from congenital or pathological causes.

In the midst of the red field of the interior of the eye appears the optic nerve entrance, or the papilla or disc, as it is termed. Though always circular in form, it is seldom a perfect circle. It is the most conspicuous object in the fundus, and is the part to which both the novice and the adept turn with most frequency, as it is here on the disc that the first signs of intra-ocular change are noticed, whether from diseases of the brain or from the more remote regions of the body.

Its color in health is usually white, or of a slight pink hue. This red or pink hue is more marked toward the nasal side of the disc. The centre often appears more clear than the circumferance, owing to the difference in the vascular supply.

The optic nerve entrance is usually on a level with the rest of the fundus, yet it may often appear raised; and this appearance is due to its entering the eyeball on a slant. This difference in the level of the optic disc, as seen in health and disease, need never be confused, as there are always other diagnostic signs.

The circulation in the retinal vessels is continuous and regular; but any hindrance to the entrance of the current of blood may cause pulsation, first in the veins, and then in the arteries. Such retardation or hindrance may be caused by insufficiency of the aortic valves.

The venous pulse is due to the arrest of the outflow through the veins by the pressure of the arterial current entering the eyeball. The ordinary cause of venous pulse is increased intra-ocular tension, as in glaucoma.

Having thus briefly stated the ordinary appearances of the healthy fundus, let us turn for a few moments and see the great use the ophthalmoscope may become to the physician in his daily practice, for by its means many obscure symptoms may be traced which would otherwise remain unknown; for it is well known that often the interior of the eye is diseased before any failure of vision manifests itself; and if in this early period, when the patient is under the care of the general physician and is in poor health, without definite signs of general disease, the ophthalmoscope being used will show albuminuric retinitis, or perhaps the beginning inflammation of the optic nerve due to tumor of the brain.

Thus in a large number of diseases, intra-ocular changes occur, and may be observed by the ophthalmoscope without difficulty.

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The chief changes in the bottom of the eye of interest to the physician are those seen in the retinal vessels, the optic nerve entrance, as congestion, neuritis, or atrophy, and those changes taking place in the retinal tissue. It shall be my effort to only mention some of the more common and usual forms of eye lesion.

BRAIN.

Optic neuritis occurs in about three-quarters of all tumors of the brain.

It usually occurs on both sides alike, and of equal intensity. The vision is very frequently unimpaired at first and may be so throughout. It is in such cases that the ophthalmoscope is of great value in making the correct diagnosis of the general disturbance, as shown by the following case seen by the writer in Charity Hospital:

Patient æt. thirty, with the following history:

Six months before coming under observation had severe pain in the frontal region, although able to attend to his duties. On arriving in New York, two months later, the headache continued in severity. He had the initial lesion of syphilis two years previous to these eye symptoms; the secondary eruption was well marked.

May, 1873.—Patient very stout and florid; gait unsteady; slowness of speech; no paralysis. Urine normal. No eruptions. Examination of eyes showed pupils dilated V=$\frac{20}{80}$.

The ophthalmoscope showed in the right eye media clear, well-marked papillitis, and great swelling; retinal vessels tortuous and turgid, a few extravasations of blood along their course; neuro-retinitis well marked. Elevation of papilla one-tenth.

Left eye, similar condition of fundus; swelling of disc less marked, being only one-sixteenth; in various places arteries covered by exuded material. Complains still of severe headache.

After being under treatment for two months, the appearances of the eyes changed slightly, the œdema of the papilla diminishing and the nerve taking on an atrophic condition. Vision finally was absolutely lost.

Except for the slowness of speech there was no evidence of any motor disturbance. The patient continued to suffer from the severe headaches, and, becoming comatose suddenly, died in three hours afterward (1873).

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The treatment of the case was from the onset by means of iodide of potassium, beginning with twelve grains and increasing to eighty grains three times a day; this latter dose he took for three weeks.

Autopsy Ten hours after death.—Revealed a large syphiloma of the right corpus striatum.

I also well remember another case, showing the value of the ophthalmoscope in the diagnosis of tumor of the brain before loss of vision was manifest, in the person of a boy of seventeen years, who complained of severe headache, and only one other symptom, viz: blepharospasm. Ophthalmoscopic examination, however, revealed the full-marked signs of "choked disc," or Stauung's papille; that is, a swollen nerve, looking angry and as if soaked in glycerine, the outline being dim and indistinct. the blood vessels being tortuous, and the veins very much swollen. The picture of choked disc due to brain tumor, once seen, will never be forgotten.

In this case the vision was absolutely normal in every respect, as the retina in the region of the yellow spot had not become diseased. The patient died, and at autopsy a cystic tumor was found at the base of the brain impinging on the left optic thalimus.

The size of the brain tumor and the intenseness of the optic neuritis seem to have no relation, as frequently at post-mortem examinations a very small tumor will be found where the intra-ocular symptoms were most marked, and *vice versa*. The rapidity in the growth of the tumor has probably more to do with this than the size; growing slowly, the brain accommodates itself to the foreign body.

Often the tumor and the neuritis correspond in their course, each being acute or chronic; the more usual form is the acute, and if the patient survives long enough the optic nerve undergoes atrophy, more or less complete, owing to the extent of the inflammatory process. Gummy tumors of the brain are frequently cured by treatment, the optic neuritis will subside in consequence; yet the damage done the optic nerve fibers remains, and either complete or partial atrophy results. Thus the great necessity of an early diagnosis, before much damage is done the optic nerve by the inflammatory exudation.

ABSCESS OF THE BRAIN.

Optic neuritis occurs in a considerable number in this affection, and the following case is an example where the ophthalmoscope was confirmatory of the diagnosis of abscess of the brain.

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W. P., æt. 50, German, machinist by occupation.

Previous history.—Three years since he had an attack of ear ache, followed by a discharge of pus from the right ear The acute symptoms rapidly subsided, leaving only a slight discharge, which has continued to the present time.

Present condition. Sept. 14th, 1881.—The patient, while bathing, got salt water into the ear, causing great pain at the time, increasing in the following twenty-four hours. When first seen, on Sept. 15th, the meatus was filled with pus, the membrani tympani perforated, the tissues over the mastoid much swollen, R H D=$\frac{0}{48}$. An incision was immediately made over mastoid three-fourths of an inch long and down to the bone, thoroughly dividing the periosteum; no pus escaped. The wound was dressed by carbolized tent.

Sept. 22d.—Patient, lost sight of since last date, returns with increased swelling and pain over mastoid region. The former incision, partly closed, was now enlarged, this time with an escape of pus. A probe can be pased through the carious bone into the mastoid cells.

Sept. 29th.—Wound dressed daily; large amount of pus escaped from it, also from meatus.

Nov. 12th.—Complains of pain in head; pus still escaping; bone spongy.

Nov. 15th.—Hardly able to walk; great pain in head; loss of appetite, nausea and vomiting. Less pus from wound and meatus; temperature 100° F., pulse 78; rational but lethargic.

The pulse varied from 60 to 80, and reached 120 only one hour before his demise.

From Nov. 16th to the 18th he remained in a semi-conscious condition, pus from meatus and wound escaping in small quantity only.

Nov. 19th.—Right side, facial paralysis, and marked divergent strabismus; pupils contracted.

An ophthalmoscopic examination made at this time showed venous engorgement and optic neuritis.

Nov. 20th. Death, after four hours of coma.

The right lobe of the cerebellum contained an abscess as large as a black walnut, situated in the centre of the lobe; the membrane enclosing it was quite thick; the contained pus was quite fetid.

The mastoid cells were free of pus; the tympanic cavity contained a few drops only.

The ear disease was the starting-point, necrosis of the cranial bones

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followed, then phlebitis of lateral sinus and abscess of the cerebellum, the patient finally succumbing to the acute meningitis.

Anæmia and hyperæmia of the brain do not, as a rule, affect the retinal circulation, this being regulated apparently by the intra-ocular tension. This fact is so well known by the ophthalmoscopist that when he hears of cerebral hyperæmia being diagnosed simply by the ophthalmoscopic appearance of the optic nerve, he is incredulous, for it is only after some time, and the congestion of the brain of some severity, that the retinal vessels become changed. Leucocythæmia often produces serious disturbance in the fundus, due to serous exundation through the vessels.

Cerebral hemorrhage gives very rarely any ophthalmoscopic picture; but, on the contrary, cases of retinal hemorrhage give warning to us of the probably future occurrence of hemorrhages into the brain.

In cerebral disease of children the ophthalmoscope, in a series of observations, showed the following ocular changes: In 63 cases of intracranial disease, a morbid condition of the fundusoculi was seen in 47; of the 47, 18 were cases of neuro-retinitis. 13 of neuro-retinitis and papillary engorgement, 4 of congestion of the optic nerve, 4 of optic neuritis, 2 of atropy of the optic nerve (consecutive), and 6 of atrophy. In 10 cases of acute tuberculosis, where at post mortem tubercles were found, 7 out of 10 cases had either retinitis or optic nerve atrophy, Although the writer has made many ophthalmoscopic examinations of acute general tuberculosis, yet he has failed to find one where tubercle in the choroid could be detected.

SPINAL DISEASES.

The most common form of intra-ocular change in diseases of the spinal cord is at first congestion of the optic disc, and, later, the resulting atrophy. If it be the spinal marrow which is diseased by anterior or posterior sclerosis, through the agency of the sympathetic nerve, we get the ocular symptoms showing themselves.

Locomotor ataxy causes atrophy of the optic nerves in about fifteen per cent., and it is more commonly an early rather than a late symptom. It occurs even years before the usual signs of in-co-ordination, and the optic nerve atrophy, with the Argyle Robinson pupil, are frequently the only signs to direct our attention to the spinal cord as a cause. In multiple sclerosis, optic nerve atrophy may occur, but less frequently

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than the posterior form. Sight usually suffers very much in these forms of atrophy, and the color sense is also destroyed.

In Pott's disease the only ocular symptom seen is a flushing of the optic disc.

IN DISEASES OF THE KIDNEY.

It was in the same year that Helmholz invented that most exact of all aids to physical diagnosis, the ophthalmoscope, which opened such an era in general as well as ophthalmic medicine that Landowzy made a special study of these affections. Instead of the visual disorders in kidney disease being now looked upon as interesting symptoms in the progress of the disease, they have now become an index of *unsuspected kidney affection* and a means of diagnosis. Frequently patients with failing vision present themselves to our notice, complaining only of this defect, and by the ophthalmoscope we are able to diagnosticate albuminurica and renal disease, already well established, by the invariable retinal picture; so characteristic is it, that when once seen it cannot be mistaken thereafter.

The changes that take place in the retina in kidney diseases are, more commonly, retinitis albuminurica, amaurosis uræmica, and detachment of the retina.

Retinitis Albuminurica.—It may occur in every form of renal inflammation, and has been seen in the amyloid degeneration, yet is more commonly associated with the granular or contracted kidney. It occurs during pregnancy and after scarlatina, and may be found in cases of spontaneous origin. The frequency with which it is associated with the kidney disease, is variously stated—*e. g.*, Galezowski found retinitis albuminurica in 33 per cent., Lebert in 20 per cent., Lecorche in 21 per cent., Earles in 29 per cent., and Ayres in 9½ per cent. Voeclkers in thirty cases found two incident to pregnancy, and the rest in the contracted kidney. It would thus seem that about 23 per cent. of patients with renal inflammation have disorders of vision at some period of the disease. In many cases the renal disease is well established before the eye symptoms present themselves, and very often the eye lesion is the first indication of general disease.

Patients with this complication of kidney disease complain only of a gradual failure of sight, everything appearing blurred and smoky. This failure of vision may in some instances come on rapidly. It generally occurs in both eyes simultaneously, although I have seen it in only one

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eye, the other remaining normal. Such a case has recently been under my care.

In these cases the patient will often complain of some trivial eye symptom, and, the ophthalmoscope not being at hand, the case is dismissed; where, if carefully examined, the diagnosis of renal disease might have been made, and the treatment established long before the general signs manifested themselves.

Opthalmoscopic Appearances.—It is rarely that we have the opportunity of seeing the first stage of the disease but those who have describe the appearances as those of congestion. Subsequently, when the patient presents himself for treatment, we find cloudiness of the papilla of the optic nerve and the adjacent retina, the nerve looks gray and swollen, its margin is indistinct, the retinal veins are large and tortuous, and show points of different color, as they are deep or more superficially seen. The arteries are smaller or normal in size; the retina about the nerve is cloudy and œdematous, with extravasations of blood here and there present, concealing, in some instances, the vessels. They are sometimes round, and again irregular in shape. We also notice white spots of various sizes, from a pin's point to the size of the papilla itself. In the macula region we find on its temporal side many fine white dots radiating from it as a centre. These dots look very much as if a brushful of white kalsomine had been thrown over the retina at this point. Often the previous cloudiness of the retina mentioned increases, the exudations grow larger, coalesce, and surround the optic papilla; the hemorrhages may increase, the specks and dots about the macula increases and become confluent. The refraction of the eye in these cases is usually hyperopic, owing to the œdema of the retina. These appearances are usually in both eyes alike, yet they may vary. In some cases they are much less marked, and we have only the peculiar stippling at the macula without any swelling of the optic papilla, and with only few, and perhaps no, hemorrhages.

These changes may subside again, the white patches becoming smaller, and the vessels they covered becoming again visible, the cloudness of the retina subsiding, and the outline of the optic nerve appearing. Only in that form following scarlatina, and that which accompanies the nephritis of pregnancy, do we see occasionally complete absorbtion; of course when the optic nerve has had much infiltration in the beginning more or less damage is done to it, and atrophy of its fibers will ensue.

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These changes, above described, are found in retinitis albuminurica occurring in pregnancy and in the various forms of renal disease.

DIABETES.

We will frequently be led to this diagnosis by the examination of the eye, not by the discovery of cataract that so commonly occurs in the late stages of this disease, but from some slight impairment of vision caused by a retinal hemorrhage due to an extravasation of blood. Such a case was under my care during the past summer, in a lady of forty years of age, who had not had her attention called to any increased flow of urine, and it was only the retinal changes that led her to the true cause.

DISEASES OF THE HEART.

One of the most common affections of the eye due to heart disease is embolism of the central artery of the retina, due to a plugging of its calibre, and is more usually found in the cases of valvular disease of the heart. The retinal arteries are so dwindled as to be scarcely seen, and the retinal veins are dilated; there may be also hemorrhages scattered throughout the fundus, the retina being more or less opaque in appearance.

Hemorrhages without exudation may be frequently seen in the retina as a result of arteritis. These rarely produce extreme impairment of vision. Their chief importance is the warning they give of the condition of the blood vessels in the brain and the rest of the body: and, as previously mentioned, such hemorrhages occurring in the eye are apt to be forerunners of hemorrhages into the brain.

IN ACUTE GENERAL TUBERCULOSIS

tubercles are found at post-mortem frequently in the choroid; yet I have failed, after many careful researches and examinations, to see any by the ophthalmoscope; this good fortune is still reserved for me. The tubercle in the choroid, when seen by the ophthalmoscope, appears like a yellow-white spot free from any pigmentation. These bodies when seen during life give, of course, conclusive evidence of the general disease.

In the acute diseases, as erysipelas, typhus, and typhoid fevers, etc., optic neuritis has been observed, and the following case, occurring in my practice, is anexample.

H. C., a male, aged thirty-nine, had received a slight cut, while being shaved, on the right side of the face, near the ear. This soon be-

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came affected with the ordinary form of acute erysipelas, in three days spreading over the entire face, though most marked upon the right side. The eyelids were moderately swollen, but no protrusion of the eye was noticed. The erysipelas did not yield promptly; ten days after it began, on opening his eyelids, the patient noticed that his vision was impaired, although to outward appearances the eye was normal. On the fourteenth day I saw him, and on ophthalmoscopic examination found much the same appearances in the fundus as had been seen in Coggin's and Knapp's cases, viz: *Right eye.*—The media were clear, and the optic disc was clear in outline, but its substance was milky, as was the retina near the nerve. The vessels were distorted and tortuous, and there was one small hemorrhage in the retina toward the periphery of the fundus. The arteries were smaller than normal, and carried less blood. Vision was $\frac{10}{200}$. One week later the eyelids were well open, the eye was clear and bright, the pupil moderately dilated, vision the same as before, the optic nerve whiter, the retina less milky, the vessels smaller, looking as if no blood entered them, and the effused blood was undergoing absorption, one of the vessels looking like a white cord. In two months the patient was totally blind in the right eye, the other remaining in good condition. The only change in the appearance of the fundus was in the optic nerve, which was white and atrophic, with only a few vessels containing blood.

The second picture we see is that of the last stage of the disease, where the patient comes, months after the erysipelas, with the ordinary picture of white atrophy of the optic nerve. In looking over records of cases of atrophy where a probable cause was given, I find out of two hundred cases only one upon which erysipelas was supposed to have a bearing. This percentage is too high.

Thus we see, gentlemen, the great variety and forms of intra-ocular disturbances liable to occur from general disease, and how urgent indeed the necessity of each one of you, and especially the general physician, of acquiring the use of the ophthalmoscope, and making it a part of your daily practice.

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ANTISEPTICS IN SURGERY.

By D. C. HAWLEY, M. D., Burlington, Vt.

The antiseptic method in surgery is based upon the germ theory.

According to this theory, suppuration is due to the fermentation of the discharges of wounds, and is caused by the entrance into wounds of particles from the outer world.

The study of these particles reveals the fact that they are living organisms, which "breathe, take in food to build up, and renew their protoplasm, and excrete waste products."

These particles or micro-organisms are known as bacteria. When these bacteria are received into the system, they set up certain morbid processes, which are characteristic of certain types of disease.

There are said to be many varieties of these micro-organisms, and several varieties often associated in any given case. These several varieties may be isolated, and cultivated through successive germinations. When this is done, and they are again introduced into the system, they are found to reproduce the original disease. While there is evidence, therefore, that the micro-organisms will produce the disease, it is not proven that the disease may not occur without their presence.

It is not my intention, however, to discuss the pros and cons of the germ theory, but rather to give an outline of the antiseptic method of treating wounds, and a few hints as to the manner of carrying out the details. And here let me say that it is attention to the details of an operation, and to the details of after treatment, which is the secret ot success with the antiseptic method, or any other method in surgery. Any man can cut off a finger or amputate an arm, but the man who makes a success of surgery is the one who with painstaking care masters all the details, who goes to an operation only when thoroughly prepared for it, and who carries out the after treatment with scrupulous regard for the welfare of his patient.

The object of the antiseptic treatment of wounds is to render them aseptic. As you all know, the antiseptic method was instituted by Prof. Lister about twenty years ago. Mr. Lister, struck by the fact that these micro-organisms of which we have spoken were destructable by chemical agents and by heat and cold, believed that it would be pos-

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sible to prevent those fermentations which led to suppuration, to septicæmia, and to pyæmia. Upon this belief the system of Listerism is founded. Listerism is a great system, and founded upon a great principle. It is a law of vital importance to the surgeon, and will always remain a fundamental principle in the treatment of wounds. It matters not what agents we use, whether carbolic acid or bichloride of mercury, or hot boiled water, or absolute cleanliness, by whatever means secured the principle is the same.

The chemical agents which are in current use at the present time for the destruction of bacteria are carbolic acid, bichloride of mercury, iodoform, and boracic acid. Originally carbolic acid was the principal agent used, and it was employed in solutions of various strength, ranging from one part of acid to twenty of water, to one to forty, or one to sixty. Within the last year or two, however, solutions of mercuric bichloride have in a great measure taken the place of the carbolic solutions. These bichloride solutions being injurious to the instruments, the latter should always be disinfected by the use of the one to twenty or one to forty carbolic solutions. The bichloride solutions which are commonly used vary in strength from one to one thousand to one to five thousand. Iodoform is used in a fine powder to sprinkle over the wound before the dressings are applied. In addition to the solutions, all the dressings and appliances are prepared antiseptically. These consist of ligatures, sutures, drainage tubes, antiseptic gauze, cotton, bandages, etc. Ligatures are made of cat-gut or silk. Cat-gut ligatures are to be preferred, except in tying the large arteries. Cat-gut may be purchased in the stores put up in bottles containing several sizes, each size being wound upon a small glass spool. Often this is of poor quality, and for this reason it is better for the surgeon to prepare his own ligatures. For most uses E violin strings will answer. Having selected those of good quality, they should be soaked for five hours in a one to one thousand solution of bichloride of mercury to render them asepctic. They may then be placed in large mouthed bottles with glass stoppers, and covered with 95% alcohol to which 10% of pure glycerine has been added. In this way they will keep for a long time. Cat gut thus prepared also answers for use as sutures.

Silk sutures are preferable only when there is much tension on the edges of the wound, or in cases where union is likely to take place slowly. Ligatures and sutures of cat gut are absorbed, and do not need to be removed, as do those of silk. They are, therefore, to be preferred

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when we wish to leave the dressings undisturbed for a long time. Silk sutures and ligatures are prepared in the same way as those of cat gut.

Drainage is essentially an antiseptic precaution, as it is designed to prevent the accumulation of fluids, and their subsequent putrefaction. It is accomplished by means of drainage tubes of vulcanized rubber or of chicken bone, and by capillarity. Large wounds should always be drained by the rubber tubing or chicken bone. Openings of about one-third the size of the tube should be clipped in either side at short intervals. Chicken bone drainage consists of the decalcified bone, with a central canal and holes cut in the sides as before described. These are purchased ready for use, but on the whole I believe them to be unsatisfactory and inferior to those of India rubber. Drainage tubes should be soaked in a one to one thousand solution of bichloride before being used. Drainage by capillarity is accomplished by means of strands of cat gut or horse hair.

The principle dressings which are now used are iodoform gauze, absorbent gauze, bichloride gauze, absorbent cotton, borated cotton, and gauze bandages containing either carbolic acid or mercuric bichloride.

In the preparation of all the different gauze dressings, the simple absorbent gauze is used. This consists of ordinary cheese cloth, which by a process of manufacturing has been rendered absorbent. Absorbent gauze may be purchased in quantities at from 3½ to 4 cents per yard. In case this cannot be procured, ordinary cheese cloth may be used.

We will now consider briefly the methods of preparing the different dressings.

1st. Iodoform gauze:

℞ Glycerine, iv ounce,
Water, viii ounce. M.

Soak the gauze in this solution, and, having wrung it out and dried it, place it on a table and rub in the powdered iodoform.

Another method of preparing it is as follows:

℞ Resin, 1 pound,
Castor Oil, 3 ounces,
Benzine or alcohol, 2 quarts. M.

Take thirty yards of gauze and soak it in the above mixture. Half dry it, and then rub in the finely powdered iodoform.

Iodoform gauze should be kept in tight glass jars.

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To prepare carbolized gauze:

℞ Resin, 1 pound,
Castor oil, 3 ounces,
Carbolic acid, 4 ounces,
Benzine or alcohol, 2 quarts. M.

This receipt will also answer for about 30 yards of gauze.

Thoroughly soak the gauze, and, after half drying it, keep it in tight jars, ready for use.

Bichloride gauze:

℞ Bichloride mercury, 1 part,
Water, 190 parts,
Glycerine, 10 parts,
Salt. 3 parts. M.

Moisten the gauze in this, and wring it out as in the former cases. It should be kept in glass jars, or folded in oiled silk.

Absorbent gauze wet in a 1 to 1,000 solution of mercuric bichloride at the time of the operation, answers a good purpose, and may be used when there is not time or opportunity to prepare it as above.

Borated cotton is absorbent cotton impregnated with a solution of boracic acid.

Some manufacturers prepare it with borax instead, but this is a substitution which ought never to be made.

As a matter of course sponges are required for nearly all operations, and they should be carefully prepared. They ought always to be thoroughly cleansed, and then soaked for some time in a 1 to 20 solution of carbolic acid.

Sponges have a much nicer appearance when bleached. The process of bleaching is as follows:

℞ Permanganate Potassium, drahmcs ii.
Water, Cong. ij. M.

Having washed the sponges, place them in this solution, and leave them for three hours. Take out, and, having again carefully washed them, put them in the following solution:

℞ Hyposulphite soda, ounces ii, drachm ij,
Hydrochloric acid, ounces i ss,
Water, g. s. ad Cong. i. M.

Leave them in this solution until they are thoroughly bleached, or about two hours.

Keep the sponges in a 1 to 20 solution of carbolic, and they are always ready for use. After an operation they should be washed and placed

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again in the solution, unless they have been used in suppurating wounds, when it is better to destroy them.

Let us now consider for a moment the details of an operation.

In the first place, the surgeon and his assistants should thoroughly cleanse their hands and arms with soap and water, and should render them aseptic by rinsing them in the 1 to 1,000 solution of bichloride.

The parts to be operated upon should be washed with soap and water, and then with the bichloride solution.

Towels wrung out of the same solution should be placed around the parts on all sides. During the operation nothing should be brought in contact with the wound that has not been thoroughly disinfected, and no one should be allowed to touch the instruments or dressings, or the parts under operation, who has not had his hands cleaned and rendered aspetic by the above solutions.

During all or a part of the time occupied by the operation, a stream of warm bichloride solution, 1 to 3,000 or 1 to 5,000, should be kept playing upon the wound, the table having been arranged so that it shall run off into a receptacle upon the floor.

The instruments should be kept in a 1 to 20 solution of carbolic acid, and frequently returned to it when not in use.

The sponges should be cleansed from blood by being wrung out in a solution of bichloride, 1 to 2,000.

Hemorrhage should be completely checked, all bleeding vessels tied with cat gut ligatures.

The operation being completed, the wound should be irrigated for some minutes with the bichloride, and then closed, if necessary, with cat-gut or silk sutures. If a drainage tube is required, it should be put in, fastened in place, and snipped off just beyond the surface of the wound, a safety pin being put through the end of it, to keep it from slipping into the wound.

The wound is now sprinkled with iodoform, and covered with pieces of bichloride gauze. Over this is placed a liberal amount of absorbent or borated cotton, and the whole is enclosed in a bichloride gauze bandage.

When completed, the dressing usually has a clumsy appearance, as it is necessary to use large quantities of the gauze and absorbent cotton, in order that the discharges from the wound may be thoroughly taken up by them.

As thus completed, the dressings may be left on for several days or

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weeks, or until the wound is entirely healed, provided cat-gut sutures and foue drainage have been used.

Finally the part should be kept at perfect rest.

I am aware that some eminent surgeons of the present day do not believe in the germ theory of wound disturbance, and argue that antiseptic precautions are unnecessary.

No doubt some of us may be inclined to take that view, but, gentlemen, it is better to to err, if at all, on the side of safety. It is better to treat a score of cases antiseptically which would have resulted favorably without such precautions, than to leave one to suffer from septicæmia.

It matters not what opinions we may have concerning any theory or system of practice, the incontrovertible fact remains that now wounds heal kindly which before the days of antiseptics were capable only of slow and tedious union; operations are to-day done with safety which then were the bugbears of surgery, and in private, hospital and military practice the rate of mortality in surgical cases has greatly decreased.

PHYSICS AS A BASIS FOR GALVANO THERAPEUTICS.

By Dr. CRAIN, Rutland, Vt.

I was led to select this subject because of the request of some of my professional friends to write something elementary on the subject of electricity, and also because so few of the works on medical electricity treat this subject scientifically; some of the most recent works are full of errors in the chapters devoted to Physics.

As science is defined to be a comparison of magnitude, it goes without saying that the first thing that is necessary to acquire in pursuing the study of any branch of physical science, is a definite knowledge of the units of measurement. In no department of science is this more imperative than in the study of electricity, which deals with the intangible.

I do not propose to go into the theories of electricity, but to treat the subject from a practical standpoint, and I shall speak of it as a fluid to be given in definite quantities, keeping in mind at the same time that it is not a substance, but a form of energy.

In reading electrical works, one is at first confused by the multiplicity

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of terms; several different ones are used that have the same meaning. The number of terms that are necessary for a practical understanding of electricity are few. First the volt, which is the unit of E. M. F.,* or the power to overcome resistance, and may be compared to the horse power of a waterwheel, and the E. M. F. is dependent on the potential, which may be compared to the head of water. The ohm is the unit of resistance, and is the resistance offered to the passage of an electrical current by a copper wire 48½ meters long and one millimeter in diameter. The ampere is the unit of current strength, and is equal to one volt passing through one ohm resistance in a second.

As the body generally offers several thousand ohms' resistance to the passage of an electrical current, it goes without saying that the ampere is not a convenient unit for medical use; so De Watteville proposed the milli-ampere for the medical unit, which is a thousandth part of an ampere, or, in other words, it is one volt passing through a thousand ohms resistance in a second. .

The current at present used in galvano therapeutics is produced by chemical action in galvanic cells; although I have used the dynamo current that is used for incandescent lighting, and I think it will be used considerably in the future. The requirements of a galvanic cell for medical use are high and constant E. M. F., a low internal resistance, cheapness of construction, durability, a minimum amount of care, and, for a portable battery, small size. In practice we cannot have all these qualities combined to the fullest extent in any one cell, so we are obliged to dispense with those qualities that are least necessary.

For office batteries some modifications of the Daniel cell, or the Laclanche, are the best. The Daniel has a low E. M. F., but it is very constant and durable, and will stand more abuse than any other cell, as it can be left on a closed circuit without damage. The Laclanche has a high E. M. F., but the E. M. F. is lowered by use, and one has to be very careful not to leave it on a short circuit. They will run a long time without replenishing.

For a portable battery, some modification of the Grenet cell and the chloride of silver cell are the best. The Grenet cell is in very general use and has the advantage of high E. M. F., low internal resistance and cheap construction, but it is rather large for a portable battery, and the fluid is liable to spill. The E. M. F. runs down quickly and the fluid has to be changed often, which necessitates a great deal of care. The

*Electric motor force.

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chloride of silver cell has a low E. M. F. about one volt, or about the same as a Daniel, but it has the advantage of small size, constant E. M. F., and it will run a long time without a renewal of any of its parts.

THE ARRANGEMENT OF THE ELEMENTS.

The elements should be arranged in series for therapeutic purposes; that is, connect the negative of the first with the positive of the second, and the negative of the second with the positive of the third, and so on. The necessary accessories to a battery are a selector, so that we can take in any number of cells at a time, from one up; an interrupter and pole changer, so that we may be able to break the current or change its direction at pleasure. The conducting wires, the ones furnished with batteries, are not durable. The ones used for connecting the lamps for incandescent lighting are the best that I have ever used. They are composed of twelve strands of copper wire, covered first with rubber, then linen, and last with silk; they are flexible and durable.

ELECTRODES.

Much depends upon having a uniform set of electrodes as records of cases are not reliable unless the size is mentioned, so it is best to adopt Erb's standard electrodes, viz.: first, fine, $\frac{1}{2}$ inch in diameter; second, small, $\frac{3}{4}$ inch in diameter; third, medium, 2 inches in diameter; fourth, large, $2\frac{1}{2}$ by 5 inches; fifth, very large, 3 by $7\frac{1}{2}$, or larger.

Erb has recently proposed what he calls a "normal electrode," which has an area of 10 square centimeters, to be used when testing the galvanic excitability of nerves and muscles.

If this is generally adopted, it will be understood that the normal electrode is used, unless otherwise stated.

A shevstat, although that is not so imperative, if we are able to add a cell at a time without breaking the circuit. And last, but not least, an exact galvanometer graduated in milli-amperes, which we should always have in a circuit.

OHM'S LAW.

The current strength is directly proportional to the E. M. F., and inversely proportional to the resistance in the circuit; or $C=\frac{E}{R}$ this is the corner stone of electrical science, and nowhere is it more important to fully appreciate it than in galvano therapeutics.

I will not go into the theory of galvanic cell, but will simply state the fact that when the poles of a cell or a series of cells are connected by a

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wire or other conductor a current is set up in the cell that passes from zinc to carbon in the cell, and outside of the cell through the wire or other conductor from carbon to zinc.

Now every substance offers more or less resistance to the passage o an electrical current. The resistance offered by the fluid in the cell is called the internal resistance, and the resistance offered by the wire or other conductor is called the external resistance. Now we want to reduce the internal resistance as low as possible, because it follows from Ohm's law that the greater the internal resistance the less available power we have to overcome the external resistance. Some writers have claimed that we should increase the internal resistance so as to equal external resistance, or the resistance of the body, which they claim makes the current smooth and unirritating, thereby making it especially adapted for medical use.

This probably grew out of the fact that they were not in the habit of practicing measurements, and also from misinterpreting the rule that in arranging a number of elements for any purpose we shall connect them so that the internal resistance shall equal the external resistance as nearly as possible; that is, when the internal resistance of each cell shall be made as low as possible. I think a better rule would be to connect the elements so that the E. M. F. would be as near the resistance as possible.

Now the facts are these: suppose we had fifty cells with an E. M. F. of fifty volts and an internal resistance of twenty ohm's each, and we pass the current through the body with, say twenty five hundred ohm's resistance, we have $\frac{50}{2500+\frac{50}{20}\times\frac{20}{2}}=\frac{1}{70}$ of an ampere. Now suppose we have forty cells with an E. M. F. of eighty volts and an internal resistance of two ohms each, and pass it through the same resistance we have $\frac{80}{2500+\frac{80}{40}\times\frac{2}{2}}=\frac{1}{31}$ of an ampere, nearly. Thus we see the current is more than two times as strong from the forty cells, of low resistance as it is from fifty cells of high resistance.

The pain and irritation that a current produces is dependent entirely upon the current strength, and its constancy, no matter from whence it is derived.

THE BODY AS A CONDUCTOR.

The liquids of the body are the best conductors, then the soft parts, especially the muscles, and then the denser structures. The skin, or, strictly speaking, the epidermis, offers the most resistance. I have seen

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it even twenty thousand ohms in the dry state. It varies greatly in different persons, on different parts of the same person, and from day to day on the same parts. With medium sized electrodes, the resistance generally varies from between two to six thousand ohms. The resistance is diminished by soaking the skin with warm water, or salt and water. The resistance of the rest of the body is so slight as compared with that of the skin, that it need not be taken into account.

DENSITY OF THE CURRENT.

The density of the current varies much with the size of the electrodes used, also with the depth of the tissue to be acted upon, as the current diffuses in the body as soon as it leaves the skin. There is the same amount of electricity passing a given point in a second, whether it be concentrated in the conducting wires or diffused in the body; it may be compared to the blood circulating in the body, it leaves the heart concentrated in the aorta, but by giving off its branches and by their ramifications the blood is diffused throughout the body and it is collected again into the venu cura and returned to the heart, but there is the same amount of blood in each part of the current. The electric current is not diffused to the same extent that the blood is, as the greater part of the current takes the shortest course from one electrode to the other, that is the path of least resistance, and the rest of it is more or less diffused, it becomes less and less dense as it leaves the direct path. This fact is very important, as we can vary the size of the electrode according to the extent of the part we wish the current to act upon, and we must increase the strength of the current when we wish to act upon the deeper structures.

CURRENT STRENGTH.

I cannot insist too strongly upon the importance of the measurement of current strength, that is the dosage of electricity. It is just as important to know how many milli-amperes of electricity we are giving as to know how many grams of iodide of potassium. It is true we do not know exactly how much of the electricity comes in contact with the parts we wish it to act upon, but this is true with all internal remedies.

The ordinary method of designating the amount of electricity has been to state the number of cells used. One cannot form any definite idea of the amount given in that way, because in calculating the strength on an electrical current we must take into consideration not only the E. M. F. of the battery, but also the constancy of

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the resistance; so that even if we have a battery with a constant E. M. F. we can form no definite idea of the amount of electricity we are using by the number of cells used, because the resistance of the body varies so much.

There is not much in the books on this subject. Bartholow in his work on medical electricity says: "Although it is true that exacter methods of stating current strength resistance, etc., are desirable in the medical application of electricity, we are not yet in a position to avail us of the results achieved in the applied science, for the human body is an altogether more uncertain quantity than a copper wire of a given length and sectional area. Furthermore, a proper statement of the various questions in the electrical science of to-day require the use of the higher algebra and the calculus and an amount of mathematical knowledge not universally possessed by medical students and practitioners."

Instead of requiring a knowledge of the higher algebra and the calculus to understand the problems that are necessary in galvano therapeutics, one has only to understand the simple rule of three. It is true that the body is a much more uncertain quantity than a copper wire of a given length and thickness, and for that reason it is much more important to measure the current, for with a copper wire we can calulate the strength of the current with mathematical certainty without the use of the meter, but with the body we cannot; for with the same nnmber of cells that have a constant E. M. F. and with the same sized electrodes I have seen the strength of the current vary four or five times on different parts of the same person on the same day; it also varies on different persons and on the same person from day to day. The measurement of the current with a meter in the circuit is just as simple as it would be if the resistance of the body was constant, and it is simpler to read the galvano meter than it is a gas meter or to tell the time of day. Some doctors have an idea that there is a difference in the amount of electricity generated in the cells and the amount passing through the body; but the amount of electricity generated by the cells is dependent upon the amount of resistance it has to pass through, and there is as much electricity passing through the body as there is through the battery. We can compare it to the water in a penstock and flume; we take the water from the river in a flume, then we concentrate it in a penstock, thence into the wheel, where it encounters a great resistance and does a definite amount of work, and then passes out through the race-way into the river again, but there is just as much water pass-

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ing a given point in the penstock as in the flume in a given time, or through the wheel or race-way. It is the same with electricity passing through the body as it is with the water passing through the wheel; in passing through the body it does a definite amount of work, but there is just as much electricity passing out of the body as there is in.

In giving electricity we have first to take into consideration the condition of the patient and the parts to be acted upon, second the amount of electricity to be given, third the size of the electrodes, fourth the depth of the parts from the surface. In keeping a record of the dosage of electricity we have to keep note of the amount given, the size of the electrodes, and to what part it is applied.

COCAINE IN GENERAL SURGERY.

WITH REPORT OF AN OPERATION UNDER COCAINE FOR CARIES OF THE TARSUS.

By JOHN B. WHEELER, M. D., Burlington, Vt.

After the brilliant results obtained by the use of cocaine in operations upon mucous membranes, surgeons were for some time disappointed by the apparent inapplicability of the new anæsthetic to the purposes of general surgery. Cocaine when applied to the skin produces no such phenomena as it does when applied to a delicate mucous membrane, and when injected into the deeper tissues the anæsthesia produced is too short lived to be of any great practical advantage, unless solutions of dangerous strength are used. Within the last year, however, a method has been discovered by which local anæsthesia may be indefinitely prolonged, and the anæsthetized area at the same time rendered large enough for the performance of extensive operations upon deep seated tissues. For this discovery the profession is indebted to Dr. J. Leonard Corning, of New York, and the principle upon which his method is based is, to use his own words, "*incarceration of the anæsthetic in the field of operation.*"

Dr. Corning holds that the cocaine is distributed throughout a greater or less extent of tissue by the blood current, but that the blood dilutes the anæsthetic, and carries it from the point of injection into the general circulation. In order to prevent the dilution and removal of the cocaine, while at the same time it is distributed as far as is desired,

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he exsanguinates the limb to be operated on up to the seat of operation, with the Esmarch bandage; then injects the anæsthetic fluid, first into the skin and then into the deeper tissues, and then constricts the limb above the seat of operation with a rubber band, thus incarcerating the anæsthetic in the area between the two bandages. This area will remain anæsthetized as long as the rubber band, or tourniquet, retains its position, because the cocaine, instead of being carried off into the general circulation, is retained in contact with the nerves of the limited area into which it has been injected. Beside prolonging the duration of anæsthesia, this method of using cocaine has the further advantage of greatly diminishing the danger of poisoning by the drug. Anæsthesia enough for a short operation can be produced without incarceration by injections of a strong solution of cocaine, repeated during the operation as occasion demands; but such a proceeding occasionally develops constitutional symptoms of an alarming nature, although no deaths have occurred, so far as I know. A four per cent. solution, such as is generally used for anæsthetizing the conjunctiva, has in some cases produced nausea, dizziness, mydriasis and diaphoresis, when injected hypodermically without any precautions. Professor J. W. Wright has reported a case in which pulse and respiration suddenly ceased, and the patient would in all probability have died but for the vigorous use of stimulants and artificial respiration. These alarming symptoms followed the hypodermic injection into the lobe of the ear of about two grains of cocaine in a five per cent. solution. But the method of incarceration enables the operator to dispense with the use of such solutions, for when the anæsthetic is in constant contact with the nerves to be anæsthetized, a solution so weak as to be harmless is quite sufficient to produce the desired effect.

The method of operation, described more in detail, is as follows: Immediately after the Esmarch bandage has been applied, the cocaine is injected into the skin covering the field of operation, which quickly becomes anæsthetized. Injections with a weaker solution are then made into the deeper tissues, and in a few moments, (from 2 to 5 minutes after beginning the first injections), the tourniquet is applied on the proximal side of the field of operation. The object of waiting until after the injections have been made before applying the tourniquet, is to admit of the distribution of the cocaine throughout the field of operation. When this is accomplished, further distribution is prevented by cutting off the circulation with the elastic tourniquet, and the anæs-

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thetic is incarcerated between the tourniquet and the Esmarch. The operation can then be begun. The strength of the solution used need not be greater than one per cent. The thigh has been amputated under cocaine with the use of a one per cent. solution for the superficial and a one-half per cent. solution for the deep injections. Corning says that the anæsthetic effect of the solution is increased by heating it to a temperature of 99° Farenheit, and that when treated in this way solutions of one-third per cent. have produced perfect anæsthesia in protracted and extensive operations. By thus employing weak solutions, the danger of poisoning is, of course, greatly diminished. A further precaution in the same direction is the *gradual* slacking of the tourniquet after the operation, in order to allow a gradual introduction of the anæsthetic into the general circulation.

In operations on the trunk or head, when it is impossible to apply the Esmarch and the tourniquet, incarceration can be produced by using a wire ring covered with rubber tubing, which when firmly pressed into the skin will cut off the circulation of the part which it encloses.

Cocaine has now been quite extensively used in general surgery. Among the operations reported as having been done under this anæsthetic are the radical cure of hydrocele and varicocele, strangulated hernia, median laparotomy, ligature of the femoral artery, amputation of the thigh, excision of the elbow, and excision of the hip. It has also been successfully used as an anæsthetic in the reduction of fractures and dislocations.

The case to which I wish to call your attention is one of caries of the tarsus in a girl eighteen years old. The only feature of special interest about it, is the success which attended the use of cocaine in the operation on the diseased bone. The operation was begun by exsanguinating the foot with an Esmarch's bandage, which was finally fastened tightly round the ankle, to serve as a tourniquet. The bandage was then removed from the foot, and a figure of eight turn taken over the instep in such a way as to leave the field of operation exposed between the two loops of the eight. The site of disease was indicated by an ulcerating surface an inch long and one-fourth inch wide, situated one-half inch above and behind the tuberosity of the fifth metatarsal bone Three injections, each of ten drops of a four per cent. solution of hydrochlorate of cocaine, were made down to the bone, two above and one below this ulcerating surface. In ten minutes I made an incision

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two inches long down to the bone, and let fall a few drops of the solution on the bone, which appeared to be the cuboid. Part of its surface was rough, friable and evidently carious. The periosteum was pushed back, the fungous tissue, a large quantity of which was present, was cut way with scissors, as was also the tough chronically inflamed skin with which the wound was surrounded. The diseased bone was carefully and thoroughly scraped away with the bone scoop, until a smooth-walled cavity was left as large as the end of the little finger. The operation lasted half an hour. The patient sat up and watched it with apparent satisfaction, and declared that she felt no pain from beginning to end, except the prick of the hypodermic needle when the injections were made. After removing the Esmarch, the wound was thoroughly washed out with a 1-2,000 solution of corrosive sublimate, one small vessel was tied with cat-gut, and the wound was dusted with iodoform and packed with sublimate gauze. Healing was rapid.

It will be seen that this operation differs in many of its details from the method which has already been described. The solution was a very strong one, and the injections were made after instead of before the application of the tourniquet, a proceeding which does not so well favor the distribution of the cocaine throughout the field of operation. The perfection of the anæsthesia in this case was doubtless owing to the smallness of the area of operation and the nearness of the bone to the surface. The reason for my imperfect technique is, that at the time of the operation I was ignorant of the details of Corning's method, and supposed that incarceration consisted merely in cutting off the circulation from the field of operation.

Cocaine has not yet been used long enough to enable us to speak positively with regard to its possibilities or its dangers. From what has already been done, it is warrantable to predict for the new anæsthetic a wide sphere of usefulness, but exactly how wide cannot be stated until its toxic properties are more thoroughly understood. The case which I have reported goes to prove one point with regard to cocaine, namely, its power to completely anæsthetize carious bone, even when the most approved method of producing the anæsthesia has not been employed.

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ALCOHOLIC ATAXIA.

By J. M. CLARK, M. D., BURLINGTON, VT.

Mr. President and Gentlemen of the Society:

When your Secretary asked me at our last meeting what I would offer for your consideration, I at once replied alcoholic ataxia. I was at that time particularly interested in this subject. The reason of my giving special attention to this topic was the experience I had with a case in which I made an unfortunate diagnosis, and gave an unfavorable prognosis, as the success of treatment afterwards proved. I will briefly present my case, and not occupy your valuable time by describing the ordinary symptoms of alcoholism, as we are familiar with them.

The case I refer to is a man 31 years old, single, by occupation a woolen manufacturer. His work was the supervision of the weaving department, having twenty-five or thirty men under charge, making his position one of great responsibility to the concern. He is a man of good intelligence and fair education. For the year previous to my knowing him he had not attended to any business. His family history has nothing to influence the case. General health usually good. Not given to excessive venery. I made careful inquiry as to his occupation and manner of life, and could find nothing to bear upon his condition except alcoholism. He has drank alcohol for five or six years; at times to excess; and during the past two years has taken it, mostly whiskey, to great excess. For weeks at a time he drank day and night, often going without food for two days at a time. Has had delirium tremens twice, the last attack about three weeks before coming here. The history shows that his alcohol habit was certainly sufficient to produce any form of trouble that may arise from its use. I understand he showed considerable difficulty in walking several weeks before coming here, but it was thought to be a stagger and tremor, and no particular attention paid to it.

He finally became so bad in his habits and unmanageable in manner that it was necessary to send him from home, where his appetite could be restrained and such treatment pursued as he needed. When admitted he was quite wild, bordering upon mania. He had a quantity of whiskey with him, and had been allowed to drink on the route, consequently he was full. He had what I thought was an ataxic gait, but

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the circumstances were such that I paid but little attention to it at the time. During the following week he went through the usual form of "cleaning up," only that his stomach was more irritable than is usual in cases of alcoholism, and this was complicated with a profuse diarrhœa, which added severity to the condition. He became excited, incoherent, and noisy. During the first month there was no improvement, but a failure of strength, until it became an anxious question whether he would live to demonstrate his real condition. However, under a tonic form of treatment he came rapidly up again. Appetite became good, and he regained his normal condition to a good degree.

I have passed rapidly over this time, only wishing to bring out such points as will give you an idea of what he passed through while producing the ataxia. As soon as practicable several very careful and thorough examinations were made, and I became convinced that I had a case of locomotor ataxia. Every test used I tried. His gait was very characteristic, patella reflex gone; he could not stand with his eyes shut, or walk without looking at his feet. He was also ataxic in the upper extremities. He could not rapidly touch his nose or any specified part of the face; could not put drink to his lips without spilling it. He had lancinating pains in spots in his legs and feet. These were so severe that he would scream out at the pain. If it was necessary to touch his limbs, it was done in the most careful manner. In short, I thought it a well marked case of locomotor ataxia, and I informed the family of my conclusions. My prognosis was of course unfavorable as to recovery. Mentally he was excited, at times wandering in thought, called upon old associates, and lived over old scenes. The treatment was variable, but electricity, both galvanism and Faradism, was persistently used, together with rubbings. Iron, strychnine and tonic, with nourishing diet, and such other medication as was indicated, was followed. In about six to eight weeks from the commencement of the active treatment he began to improve. First he could stand better, next he could walk alone, then he fed himself, and so the change went on.

Friends came to visit him. I explained to them that he was much improved, but I thought only temporary, still adhering to my original diagnosis. He was so much better that he was removed home to a distant State, to be near the family and friends. The treatment I was pursuing was to be continued by the physician there.

I have been in constant correspondence with the family, and he is now, after a year's duration, considered well. I have a letter from him

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in his own handwriting, dated September 21, 1886, which says he is perfectly well, except a weakness in the hands.

The recovery of this case has satisfied me of my error, and that it was alcoholic ataxia instead of locomotor ataxia.

It is very difficult to decide between two diseases with the same symptoms in each, and it is well to be a little slow in committing one's self to so important a decision. In looking up this subject, I find the literature is not plenty.

J. Dreschfeld published his observations on alcoholic paralysis in 1884, which excited general interest, and brought out able articles with report of cases in Europe and America. In a subsequent article he refers to these.

He now divides alcoholic paralysis into two groups, alcohoic ataxia and alcoholic paralysis, the more prominent symptoms naming the class.

That it is necessary to distinguish between cases where there is marked incoordination without much paralysis, and in those where paralysis is most marked. He considers the Ataxic form the milder type of the disease. In the Ataxia, patients complain mostly of pain in the legs and feet. He gives the usual Ataxic symptoms, ataxic gate, ataxia of the hands, inability to stand with closed eyes; and loss of patella reflexes. All these symptoms I have noted as well marked in this case. The mental symptoms in this case perhaps, are characteristic of this condition. His favorite illusions and delusions were holding repeated conversation with former friends and acquaintances, giving orders about his wants to old companions, directing about his business as if in active occupation. Another frequent idea was traveling to and from familiar places. He would reply to questions correctly, at the same time call the person addressing him by the name of some old friend.

The pathological change which causes Locomotor Ataxia is central, that is in the posterior columns of the cord, and is permanent. In Alcholic Ataxia the change is peripheral and is transient as a rule, with treatment.

The recovery in this case domonstrates this fact.

Ross in his admirable work on nervous diseases, has a short article on alcoholic paralysis, giving similar symptoms in the ataxic form which I have noted and says recovery is the rule.

Buzzard, of London has published a little book this year, '86, on "Paralysis from peripheral Neuritis from Gouty, Diphteric and Alco-

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holic origin." After citing several cases of paralysis from these causes, which were peripheral and recovered, he concludes the cause to be Neuritis.

It is pretty satisfactorily settled that alcoholic paralysis as also paralysis from diphtheria, gout and lead, is peripheral in origin, and caused by multiple neuritis. Neuritus is usually due to exposure, or to some toxic element taken into the system. Among these are alcohol, diphtheria, arsenic, rheumatism, lead and syphilis.

An editorial article in the New York Medical Record of September 25th, brings out some points which were prominent in the case I presented. Particularly as to the ataxic form in which the symptoms resemble Locomotor Ataxia. Marked Ataxia without any great loss ot muscular power. Tendon of reflex gone. etc. These may deceive the physician and lead to a wrong prognosis and diagnosis.

The experience of the case which I have related has taught me that great care should be exercised in making a diagnosis from symptoms of Ataxia, and the prognosis guarded.

The origin of alcoholic paralysis and ataxia is peripheral and caused by neuritis. That alcoholic or peripheral paralysis recovers under favorable circumstances and proper treatment.

LACERATION OF THE CERVIX UTERI.

By N. P. WOOD, M. D., Londonderry.

My apology for presenting a paper on this subject is, its frequent occurrence in parous women, followed, in many cases, by such dire results, and its lack of discussion in our medical meetings.

This leison is attended by such varied conditions and symptoms that it often perplexes a physician to decide just how important a factor it is in the various diseases connected with the womb. To illustrate: In one lady this leison may exist for years with no bad results and absolutely no symptoms and yet the laceration be very extensive and discovered only by accident, while in another the laceration may be slight and yet a serious and troublesome result may follow in a short time after it occurred. The recognition of this distinct and important lesion with the operation introduced for its cure is one of the many gynecological ad-

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vances of the last 20 years. For this we are indebted to the genius of Emmet of New York, who elaborated the operation for its cure. Sir James Simpson had previously drawn attention to the frequency of its occurrence and its value as a diagnostic of parturition. Roser of Marburg had described the pathology of this condition; but its importance as a factor in uterine disease was brought into notice by Emmet's first paper which was published in 1869.

The subject of laceration has only recently received general attention by authors in gynecology and even at present it is to them a *questio vexata*.

PATHOLOGY.

The commonest seat of this lesion is to the front and left side of the cervix; and the reason for this, according to Hart and Barbour, is that the long diameter of the child's head is most commonly in the right oblique diameter of the pelvis and the thicker end of the wedge is to the front. Less frequently the laceration is at either end of the left oblique diameter. Where the head presents right occipito-anterior the lacerations are found to the front and right sides.

The form of the laceration may be single, double or multiple. Its extent may vary from a mere indentation of the *os externum* to a complete fissure of the lip of the cervix up to the vaginal fornices. It is sometimes very extensive in forcep cases when the forceps have been applied before the os was fully dilated. Accordingly a cicatricial band is formed which draws the cervix more or less to one side. The result of the laceration is that the mucus membrane of the cervical canal is exposed and, either as an immediate result of the injury, or from friction against the vaginal walls, or both, the mucous membrane becomes inflamed. The sub-mucous tissue is also thickened and the whole cervix thus hypertrophied. As an attendant result, the lips of the cervix are everted. On account of the inflammatory changes the cylindrical epithelium of the mucous membrane, lining the cervix, proliferates more rapidly than the squamous covering the outside, and extending, produces an appearance of erosion.

Other pathological conditions are often associated with lacerations. Emmet claims them to be the result of this. Cellulitis is one of the most important, usually localized and on the same side as the laceration in the shape of a destinct deposit. Sub-involution of the uterus is frequently present; there is a formation of cicatricial tissue, which compresses the blood vessels, leading to passive congestion and hypertrophy.

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ETIOLOGY.

This lesion exists in 32.8% of parous women according to Emmet; in 30% according to Munde. Some writers claim that it takes place in every first full-term labor. Obivously it may and then heal entirely; but of this there is no certainty. Of the conditions of cervical tissue predisposing to laceration we at present know but little. One would think that an indurated cervix, coeteris paribus, would be more likely to be lacerated than a flaccid one. Emmet and Pallen claim that lacerations are more frequent in long tedious labors than in rapid ones. Fritsch claims the reverse to be true. My own observation agrees with the former. Barker and Munde draw attention to the fact that they are less common among the wealthy than among the poor, doubtless owing to the better care and longer rest in the puerpesium which the former enjoy.

SYMPTOMS.

As I said in the beginning the symptoms are varied, but few being constant and oftentimes no symptoms are present except the laceration. Thomas states that laceration of the cervix is an exciting cause in the following diseases of the uterus: chronic cervical endometritis; chronic corporeal endometritis; areolar hyperplasia; granular and cystic degeneration of the cervix uteri; periuterine cellulitis, etc., etc.

As a secondary result from these occur a list of pathological conditions important among which are prolapsus and the various flexions and versions. Obviously the symptons *are* various.

At the fifty-fourth annual meeting of the British Medical Association, held at Brighton, England, in August, Dr. M. Beverly gave a record of 20 cases of Emmet's operation for the laceration of the cervex uteri in which he mentions as prominent symptoms of this lesion, backache, anemia, sleeplessness, mental irritability, face ache, and leucorrhoea. Vaginal examination generally shows ectropian of the cervix, granular erosions, hardness of tissue, and a bulky uterus. Much new tissue is always present. Neuralgia is often a troublesome symptom, menstruation is often irregular.

Sutton has recorded an interesting case in which cataleptic convulsions were present. The convulsions could be produced at will by pressing the finger into the angle of the laceration. They occurred spontaneously several times a day. Emmet's operation effected a complete cure.

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DIAGNOSIS.

The diagnosis is usually not difficult. The finger feels the indentation of the fissure in the external os, which latter is patulous and will sometimes admit the whole distal phalanx. Any difficulty in diagnosis is usually the result of considerable eversion, the consequence of which is that the external os is formed by the cervical membrane. The speculum clears up all uncertainty.

The following is Hart and Barbour's description: "We see a bright irregular patch on one side of or surrounding the os; from its granular appearance, its vascularity and the fact that it bleeds easily, it resembles an ulcerated surface. For this reason it is often described as ulceration of the cervix; but it is no more an ulceration than is the inflamed mucous membrane of the conjunctiva. By ulceration we understand a distruction and a loss of tissue. The raw looking surface appearing secondary to, and also independent of lacerations (as in catarrh of multiparae) is not an ulcerated surface."

Munde and Nieberding, Ruge and Viet have produced a series of chromo-lithographs fully illustrating the appearance of the various conditions of a lacerated cervix. The tenacula are a valuable adjunct to the speculum in diagnosis. By placing one in the anterior and one in the posterior lip the everted surfaces can be rolled in upon each other and the edges of the laceration be approximated, thus disclosing its extent. Emmet first drew attention to this fact and from it developed the operation which will always be associated with his name.

TREATMENT.

This consists in removing all cicatricial tissue, paring the edges of the laceration, and uniting them with sutures. This is Emmet's operation stated in brief. Skill is shown in treatment, in knowing when to leave the case alone rather than operating. We should not operate when the laceration produces no symptoms, or when chronic pelvic peritontis or cellulitis is present. The operation is recommended in cases of pronounced eversion of the mucous membrane with cervical catarrh, with or without subinvolution. The latter often entirely disappears after the operation. Emmet says: "In every instance where the condition is evident, and where enlargement of the uterus still remains, or where the woman suffers from neuralgia, I consider an operation necessary, notwithstanding the parts may have completely healed."

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OPERATION.

The patient's general health should be made as good as possible by tonics, and nutritious but non-stimulating diet. Her digestion should be carefully looked after. If any inflammation or congestion exists in or about the uterus, it should be got rid of in the usual way. Granular erosions about the os, cervical catarrh, and congestion, I have usually treated as follows: With a wire curette, I remove the granulations and then apply the solid stick of silver nitrate. Then a tampon of borated cotton is saturated with glycerine and placed against the os. The next day the tampon is removed and *hot* water irrigations are used twice daily fifteen minutes at a time. Then every 3rd or 4th day the os and lacerations are painted with Tinc. Iodine Co., and the glycerine tampon is applied to remain over night, followed by the hot water irrigations. Every ten days or two weeks, the silver nitrate is used as at first. If very much congestion of the cervix exists, once a week, several drams of blood are extracted by means of punctures with an exploring needle, scarification or leeches. This should be continued until the parts are very much improved and the patient feels quite well. The patient should then be prepared for bed, ether administered, and placed in Sim's position. Any old-fashined fall-leaf table will do for an operating table. Two physicians besides the operator are necessary, and two or three other assistants. The instruments necessary are: Sim's speculum, 2 sponge holders, 1 dozen sponges, volsella, tenacula, bistoury, long straight, and curved scissors, dissecting forceps, short straight and curved needles, long needle holder, medium silver wire. I do not mention a uterine tourniquet, because the hemorrhage is usually not troublesome, and I consider quite free hemorrhage an after advantage. If very much hypertrophy of the cervix exists, a triangular portion of tissue at the bottom of the laceration should be removed; the edges of the laceration should then be entirely denuded and united with silver wire sutures. Care must be taken to leave sufficient mucous membrane to form a perfect cervical canal. The edges of the laceration should be drawn together with the tenacula to see how much tissue must be removed to allow of perfect coaptation. Of course the instruments should be immersed in carbolized water previous to the operation, and the sponges should also be soaked in carbolized water, or a solution of corrosive sublimate 1 to 1000. When the operation is completed the parts should be cleaned with one of the antiseptic fluids

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mentioned above, and then iodoform should be dusted upon the cervix. The after treatment consists of good nourishing diet, absolute rest in bed until the sutures are removed. and irrigations morning and evening with a corrosive sublimate solution, 1 to 2000. The stitches are removed on the 8th or 9th day, and should be removed from above downwards, else in reversing this order the lower portion may be torn apart in removing the upper sutures. Authorities claim that the cicatrix does not cause difficulty in subsequent parturition. Pollen of New York, first stitched up the laceration immediately after parturition, because of a troublesome post partum hemorrhage from a lacerated cervix which he failed to check by other means, but succeeded with this. Considering the liability to septic inflammation in the puerperal condition, the immediate operation cannot be advised unless the hemorrhage is considerable and cannot be controlled by other means. I will now give a record of three cases which have occured in my own practice.

Case No. 1. March 31st, 1884. Mrs. Eva F., aged 28, was delivered of her first child. It was a long and tedious labor and I finally delivered her with forceps. She sustained a partial rupture of the perineum, but I bound her knees together and she made a satisfactory recovery. When the child was 5 weeks old she rode out. On the succeeding day, she took a second ride, but on her return instead of allowing herself to be lifted from the carriage as on the preceding day, she jumped unassisted to the ground. When she struck, her limbs did not sustain her weight, and, as she expressed it, her legs entirely gave out and she sunk a helpless mass to the ground; and at the same time she felt something give way in her perineum. She was not able to walk for several days, and when she did walk she experienced considerable difficulty. Soon she experienced a dragging sensation in her hips, suffered from backache, sleeplessness, etc., etc., until the 9th of June, when I was sent for. I found evidence that her ruptured perineum had been united and then torn apart, doubtless when she jumped from the carriage. I also found a multiple laceration of the cervix. I called Dr. Ray in consultation and we decided first to get rid of the then existing inflammation, granular erosion, and congestion, and then to operate on the cervix and perineum at the same time. I painted the os with Co. Tinc. of Iodine, occasionally touching it with lunar caustic, and applied glycerine tampons and hot water irrigations. The operation was performed July 29, followed with complete success.

Case No. 2. July 29, 1885. I was called to see Mrs. Mary C.,

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aged about 30. She had two children the elder of which was 4½ years old, the second was 16 months younger. Since the birth of her first child, she had suffered more or less with such symptoms, according to the history which she gave, as led me to suspect laceration of the crevix. On examination, I found a multiple laceration, which had in ways already indicated caused so much trouble as to result in a slight prolapsus. The most prominent symptoms were pain in the back, dragging sensation in locomotion, sleeplessness, loss of appetite, and leucorrhœa. She was unable to do any work and could walk about but little. I treated her about two months with applications of Tinc. Iodine, glycerine tampons, and hot water irregations, with so much relief to her that she concluded not to have an operation performed. After about 3 months more I was again called and found her in a little worse condition than at first. I again treated her as before, and after getting her in proper condition for it, operated on Jan. 25, 1886. Complete recovery ensued and in less than three weeks she was doing her own work without assistance and has so continued to do up to the present time.

Case No. 3. In Sept. 1884, I was call to see Mrs. A. L. C., aged 21. She had one child, then about 4 years old. I obtained a history very simular to that of the preceding case. On examination I found a multiple laceration, and in addition to other symptoms a retroversion of the uterus. I treated her very much as I did case No. 2, with the addition of a pessary to restore the retroverted uterus. After 2 months treatment she was so much improved that I discontinued my visits. In April, 1885, she became pregnant and I delivered her of an 8 lb. child, January 3rd, 1886. Her progress during the first two weeks after confinement was very satisfactory, after which her old troubles began to reappear. There was considerable localized cellulitis in addition to other symptons already mentioned. I treated her till the last of April in a manner similar to that already mentioned, before she was in a condition for an operation. Owing to a severe sickness of her baby, the operation was not performed till May 25. She made a good recovery, and the result is a complete cure with the exception of the retroversion, and that is much improved. Her general health is much improved and she has gained about 15 lbs. in flesh. She now wears a pessary while at her work which she does without help. She has 4 and 5 in her family.

Another case occured in the practice of Dr. Ray upon which I assist-

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ed him to operate, February 28th, 1885. I have no notes regarding this case; but understand it was simular to my case No. 3, and that a cure is the rusult. except that the patient now wears a pessary a portion of the time.

URINARY ANALYSIS.

By JO. H. LINSLEY, M. D., Burlington.

Mr. President and Gentlemen of the Vermont Medical Society:

In no department of medicine has there been a greater advance within the last ten years in the methods of investigation, and the therapeutical application of results obtained, than in uroscopy. At the present day no competent physician advances a positive diagnosis in the majority of purely medical cases with which he is brought in contact, without a full knowledge of the condition of the renal secretion; chemically and microscopically obtained. The manipulations required for the analysis of urine have been so simplified of late years as to require but a small outlay on the part of the physician for apparatus, and a reasonable amount of laboratory instruction.

In acquiescing to the request of our Secretary, to prepare and read a paper on "Urinary Analysis" before this society at the present meeting, I at first intended to select some one subject in this branch, and treat it as fully as I could. Upon reflection, however, I became satisfied that such a paper would not be of as much interest to the profession as a more practical one. I therefore concluded to prepare a short summary of the latest methods of examination and their therapeutical application, laying particular emphasis on those points, a knowledge of which I have found, by experience, practitioners to be deficient in.

REACTION.

As we all know, the normal reaction of the twenty-four hours *mixed* urine is acid. At different periods however, during this time, the fluid has a neutral and even distinctly alkaline reaction. This occurs in the middle of the forenoon, and during the greatest activity of stomach digestion. Two principal theories are advanced to explain this latter phenomenon: *First;* by Bruce Jones, that the abstraction from the

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blood by the gastric follicus. of the acid principles of the gastric juice, leaves the liquor sanguinis in a more alkaline condition than usual. *Second*; by Roberts, that the admixture of the alkaline food-products with the blood, causes an increased alkalinity. Both of these theories have their supporters, and both appear rational. The alkalies causing the alkalescence of the urine at these times are compounds of Na and K, the *fixed* alkalies.

But we may have a urine that is alkaline from an entirely different substance—namely, ammonium—a volatile alkali. The difference is determined by carefully and thoroughly drying the litmus paper, turned blue by the alkali. If the alkali be a *fixed* one the color is permanent; if volatile, the blue color disappears, and the red returns. (In drying the litneus paper it is well to pin it to the edge of some shelf, allowing it to dry slowly.) It is *very* essential that the difference between these two be determined for the following reasons: An ammoniacal urine is produced by any inflammatory action along any portion of the genito-urinary tract, causing an increased secretion of mucus and thus forming the conditions necessary for the splitting up of urea and the liberation of ammonium carbonate. This is brought about by spores in the mucus that act in a manner similar to yeast in the alcoholic fermentation. Consequently it is of vital importance in examining an ammoniacal urine to determine whether the urine was in this condition *when voided*; as *all* urines, upon standing a longer or shorter time, pass into this ammoniacal state.

There has been, and is now, considerable discussion as to whether in cases of cystitis with ammoniacal urine, the irritating alkaline fluid is not the cause *per se* of the cystic trouble, or whether the condition of the urine supervened after the irritation of the bladder has been produced by causes other than the abnormal reaction of the renal secretion. I think a close observation of cases of the kind in question, will convince any one that in *every* case where an ammoniacal urine is passed, a certain amount of inflammation *always* precedes this condition. Besides increasing the irritation and inflammation of the genito-urinary mucous membrane, the continued presence of an ammoniacal urine in the bladder, (or *any* alkaline urine, for that matter,) favors of course, the formation of phosphatic calculi.

I here reiterate the advice always given by writers on this subject, namely: always obtain the reaction of a urine as soon after it is voided

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as possible; because the reaction normally may change several times within twenty-four hours.

The reaction of the urine is determined many times to ascertain if the full effects of some drugs are obtained. As an example might be mentioned the case of salicylic acid when given in acute rheumatic fever; an alkaline reaction being evidence of the full effect of the drug.

It is perhaps well to mention the necessity for keeping a close watch of the reaction of the urine in gonorrhœa; a hyper-acid urine continuing or increasing an irritation already established; the exhibition of an alkali causing a rapid subsidence of the pain and irritation in the majority of cases.

SPECIFC GRAVITIY.

In regard to to the specific gravity, but a word or two need be said. I would urge upon members of the profession the advantage to be gained by accustoming themselves to taking the reading on the spindle or urinometer, at the *surface of the urine* and not *below* the surface as many do at present. The principal objection to the latter method is that in the case of a cloudy urine, the observer is required to filter the same before he can observe the scale on the instrument.

I might also add a word of caution in regard to the urinometers themselves. It is rare to find one exactly correct at all parts of the scale. It may read 1000 in distilled water at 15° C. (60° F.) and still be in error at 1020. I can suggest no better method than to test the instrument at different points on the scale with one *known* to be correct. and note down the deviation for future reference. It can also be tested with solutions of known sp. gv.

A difference of 4° C. (7° F.) from the temperature at which the instrument was graduated, represents a difference of one degree in the registration of the instrument.

SOLID MATTERS.

They normally amount to from 60 to 80 grams. They may be determined by multiplying the last 2 figures of the sp. gv. by the co efficient of Trapp-2; of Christison and Haeser-2.33, or of Loebisch-2.2. The result thus obtained gives the number of parts of solid matters per 1000 parts of urine, (or grams per litre.) Urea comprises ½ and the chlorides ¼ of all the normal solid matters. Of the remaining ¼ the phosphates compose it largely.

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APPLICATION OF HEAT.

After obtaining the color, specific gravity, and reaction of a specimen of urine, the next step usually taken is to heat a portion of it in a test tube. In doing this certain precautions are necessary. The urine should be feebly acid in reaction. If alkaline and a small amount of albumin be present, a soluble alkali-albumin (casein) will be formed, which will not be precipitated upon boiling, and the presence of albumin not detected. On the other hand if a strong mineral acid be added to acidfy an alkaline urine which contains a small amount of albumin, the albumin will be held in solution in the shape of an acid-albumin, or syntonin, and this in turn is non-coagulable by heat.

These may seem trifling and unnecessary precautions, but I can assure you gentlemen that I have many times seen failures to detect the presence of small quantities of albumin, (always of the *highest* importance,) owing to a neglect of these simple measures.

ALBUMIN.

Notwithstanding all that has been written concerning the various tests for albumin, it is certain that the careful application of the heat and NO_3 H tests, will detect the smallest quantity of albumin that would be of pathological significance. In using the nitric acid test it is well to bear in mind, that besides albumin, the different urates, and a resinous substance found after the ingestion of Bals. Copaibae and Spts. Turpentine, also form a ring at the junction of the acid and the urine. The appearance of the ring formed by urates is essentially different from that formed by albumin, being higher up than this substance, and shading off gradually into the urine above. It is quickly dispelled by the application of a moderate amount of heat, (it should not be boiled), while the ring of albumin is unaffected thereby. The differentiation between the albumin ring and that produced by a resinous substance, is by the addition of alcohol, which dissolves the latter, and does not affect the former. The necessity of frequently testing a urine in which a trace of albumin has been found, without the presence of casts, is well known, but cannot be too often mentioned.

THE QUANTITY OF ALBUMIN MET WITH (OLIVER.)

As a rule albuminous urines contain less than 1%, only now and then the amount rises to 2%, and it is but a rare observation to find

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more than 2½ to 3 or 4%. The proportion in blood serum is only about 5%, and when the urine contains this large amount, boiling completely solidifies it. The general impression as to albumin appearing in the urine in larger quantities than these is groundless. The presence of it in the urine is but a symptom, which may indicate a condition of little clinical moment, or may signify serious organic disease.

SUGAR.

Undoubtedly the most satisfactory qualitative test for sugar is Moore's or Heller's test with liquor, potassa and heat. In cases of doubt as to the result, it is well to compare the urine after the application of the test with an equal amount of untested urine in a test tube of the same size. In this way the slightest change in the color may be detected. A precipitate of earthy phosphates always occurs in this test, but is no indication of the presence of sugar.

As confirmatory tests of the presence of glucose may be mentioned Bœttger's, Fehling's, Mulder, Neubauer and Trommer's. The last named test is going out of use on account of the errors liable to be made in its applications and erroneous deductions made from the results. The following, which I have taken from Witthaus' "*Laboratory Guide in Urinalysis and Toxicology*," is recommended as the proper way to apply this test:

1st. To the urine in a test tube add 2 drops of a saturated solution of cupric sulphate and a volume of caustic potassa solution equal to half that of the urine. Observe that the liquid is blue and transparent. Heat until the liquid *begins* to boil. The formation of a yellow or red ppt. indicates the presence of glucose.

2nd. Apply the test as just described, using a urine containing a large amount of sugar. The liquid changes in color from blue to yellow, but no precipitate is produced.

3rd. Repeat the testing of the highly saccharine urine adding 6 drops in place of 2 drops cupric sulphate solution, and allow the liquid to stand after boiling. The yellow or red ppt. is produced.

4th. Repeat the test with the urine used as first described, adding 6 drops cupric sulphate solution, and boil for a longer time. A black or dark colored precipitate is produced.

The presence of the following substances interfere with Trommer's test: uric acid, sar cosin, mucous in excess, albuminous matters, especi-

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ally peptone, Kreatin, Kreatinen and pepsin, and urinary coloring matters.

RECAPITUALTION.

Trommer's test only shows that sugar is present when a *distinct yellow or red ppt.* is formed. A mere change of color, or the formation of a ppt. different from that described, is not sufficient evidence of the presence of sugar. Therefore, in applying this test in practice use only a small quantity of cupric sulphate solution at first, and if in a first testing a change of color be observed, but no ppt., make a second, using an increased amount of the solution of copper.

UREA.

In the absence of glucose, the amount of this substance can approximately be determined from the sp. gv. and the relative amount of chloride of sodium present. As we have seen, urea forms ½ and the chloride ¼ of all the solid matters in the urine. Therefore if we have a urine with a sp. gv. of from 1018 to 1025, (the limit of the normal average sp. gv.), and a normal amount of chlorides, we are perfectly justified in assuming that a normal amount of urea is present.

Among the many processes for the quantitative determination of urea, probably the best and most simple one is that by Fowler's method. This is based on the loss in sp. gv., a urine suffers by admixture with a solution of hypochlorite of Soda, (Labarracque's Sol. or liquor sodae chlorinatae, (Squibb,)) the urea being decomposed, and N. gas liberated.

The sp. gv. of the mixed solutions is determined (sp. gv. sol. x7 + sp. gv. ur. ÷8= sp. gv. mixed,) before the reaction takes place. It is then obtained after the reaction, and the loss multiplied by 0.7791, and the product is the amount of urea in grams in 100 C. C. (drachm 3.38 ounces) of urine. Thus the amount eliminated in 24 hours can be obtained by multiplying by $\frac{1}{100}$ of the quantity of urine passed in this time.

Example quantity of urine 1240 C. C.

$\frac{1042\times7+1020}{8}$=1039.25—1036.2 (sp. gv. after reaction,)=3.1——0.7791 ×3.1×12.40=29.959 m's (drachms 7½) in 24 hours.

BLOOD.

A very delicate test for the presence of blood is with a solution made by mixing equal parts of Tr. Guiac and Sp. Turpentine, (older the

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better,) and shaking until an emulsion is formed. An amount of this equal to the amount of urine used is shaken up with the urine, and then allowed to stand, when the emulsion will separate, and if blood be present an intensely blue color will be observed at the point of contact, and extending a little way into the emulsion. The emulsion must be fresh to obtain the best results.

BILE.

Pettenkofer's test is applicable only to the biliary salts, and then only after a longwinded operation. The simple performance of the test as usually given (i. e. a drop of a solution of cane sugar and S. $O._4$ $H._2$) is open to the objections that the same reaction is obtained with albumin, and morphia, in the *absence of biliary salts*. Again the biliary salts are not found in the urine nearly as often as the biliary pigments. The best test for these latter is Guertin's, which is as follows: Put about 3 c.c. (1 drachm) of colorless nitric acid into a test tube and drop in about 1c. (⅜ in.) of the butt end of a match. Boil until the acid assumes a yellow color. (In doing this we produce nitroso-nitric acid.) Pour the colored acid into another test tube. Then immerse the test tube in a beaker of cold water till the acid is cool. Then float on the acid about 3 c. c. (1 drachm) of the urine, and if biliary pigments are present a green band is formed at the junction of the two fluids, which gradually rises higher and higher, and is succeeded from below by blue, reddish-violet, and yellow. The green color is more marked than the others, and is the most characteristic of biliary pigments.

URIC ACID.

No test for this substance has as yet superseded the Murexid test, with which you are all undoubtedly familiar.

SEDIMENT.

In speaking of the sediments in urine, I shall only consider the chemical tests of their nature; to attempt to review the microscopic appearance of the different sediments would require an elaborate paper of itself.

Much concerning the nature of a sediment can be learned without the aid of a lens, though, to be sure, the determination of so important an abnormal constituent as tube casts can only be accomplished by its

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aid. The general appearance of the deposit alone is a good deal of assistance to the experienced analyst; he being able by it, many times, to form an opinion as to its nature the truth of which will be borne out by subsequent testing.

1. The *only* precipitate cleared up by the application of heat is that formed by the urates. The degree of heat required to do this is often no more that that obtained from the palm of the hand when firmly grasping a moderately thin test tube, containing a deposit of uratis. Is there any other reagent which will clear up the urates? Yes; liquor potassa, but this *also* clears up a sediment composed of pus, if present, comprising Donni's test for pus. The difference between the solution containing the dissolved uratis, and that containing the dissipated pus, is that while the former fluid is perfectly limpid, flowing readily, the latter cannot be separated into drops, but upon pouring it from the test tube it will be found to "*string*," forming a continuous line from the mouth of the test tube to the receiving vessel. In other words, it has exactly the consistence of white of egg.

2. The reaction of the urates must not be confounded with another possible condition, which is brought about by the application of too great an amount of heat. I refer to the precipitation of albumin, and the separation of phosphates. The former is coagulated, and falls to the bottom of the containing vessel in flakes, if in abundance, and as a light cloud if in smaller quantity. The latter is caused by the liberation of carbon dioxide by boiling, thus destroying a condition necessary for the solution of the phosphates, namely: a certain degree of acidity.

The precipitate caused by the disposition of urates is the most disagreeable looking one we have, and I might here remark that I have seen no sediment (I had almost said *condition*) of the urine produce so much anxiety on the part, not only of the laity, but of the medical profession themselves, before the exact nature of the sediment was determined.

The cause of a precipitation of the urates are concentration of the urine, lower temperature, and moderate acidity.

3. A precipitate of phosphates may occur in a urine from a lack of degree of acidity necessary to keep them in solution. They are instantly re-dissolved upon the addition of a drop of nitric acid.

4. The chemical reaction of pus as a sediment has been mentioned.

5. A sediment which is not affected by the application of heat, or

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the addition of nitric acid, can be safely put down as consisting either of mucus in excess, bacteria, or spermatic fluid; one or all.

It would be hardly proper, perhaps, to leave this subject at this day without reference to the new and delicate tests for albumin, described by Drs. Johnson, Oliver and Tanret. They consist of the picric acid, sodium tungstate with citric acid, potassio-mercuric-iodide, ferrocyanide of potassium, and Robert's acidulated brine solution. Dr. Geo. Oliver in his work "*Bedside Urine Testing*," fully describes them, as does Tyson in his fifth edition of "*A Guide to the Practical Examination of Urine*."

As a personal convenience to the practitioner, Dr. Oliver has had strips of bibulous paper impregnated with the different reagents, and experience has fully demonstrated not only their convenience, but also their trustworthiness, stability, and clinical advantages.

The use of these tests has also increased the importance of that class of protieds represented by peptone and mercin, as constituents of urine, but a consideration of them is a subject sufficient for a whole paper.

REPORT OF A CASE OF FAILURE OF RESPIRATION AFTER ANÆSTHESIA BY ETHER.

By F. C. AINSWORTH, M. D., U. S. ARMY.

John Longard, Prussian, aged 40, single, and by occupation a carpenter, appears Oct. 15, 1884, complaining of a pain in his left knee, which he thinks is rheumatism. Has been actively employed as foreman of a railroad bridge gang until two weeks ago, when his present trouble was first noticed. Examination reveals an aneurism in the left popliteal space of about one-half the size of the closed fist. Is positive that he had no trouble prior to two weeks ago, and that he has received no injury of any description. Has no heavy lifting to do, and does not remember having strained himself for months. Until his attention was called to the fact, was not aware that any tumor existed in the ham. Is 5 ft. 8 in. in height, weighs 145 pounds, and appears to be a spare, though well nourished and robust man. Never has had any serious sickness, or received any severe injury in his life; has never been a hard drinker, and denies venereal. Mother died of "dropsy,"

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otherwise family history is good. Careful examination reveals no cardiac lesion. His arteries all appear to be sound, save the popliteal, and perhaps the temporal, which is a little hardened, more tortuous and prominent than normal. Urine 1023, acid, no albumin or casts. Patient is informed as to his condition, and advised to submit himself to treatment if the pain or swelling increase.

Oct. 21. Presents himself in a very much worse condition than a week ago. The tumor has doubled in size, and the pain is much more severe. Cannot straighten the leg; can only walk with great difficulty.

Oct. 23. On account of the rapid growth of the aneurism and the intense pain attending it, together with the fact that the patient did not bear well attempts made to use compression or flexion in the treatment of his case, it was decided to at once ligate the superficial femoral, which was accordingly done. Ether was administered, and well borne. The artery was exposed in the usual manner, and tied with No. 2 carbolized cat-gut at the edge of the sartorius, horse-hair drains were inserted, and the incision closed with silver wire sutures. Full antiseptic precautions were used preparatory to and during the operation, except the spray, which was replaced by the carbolized douche. The full Lister dressing was applied, and the whole limb enveloped in batting. The sheath of the vessel was unusually adherent, and some little difficulty was experienced in passing the needle on that account, but the artery was secured without accident, and all pulsation in the tumor below ceased immediately.

Patient rallied well from the anæsthetic, but as soon as he had fairly regained consciousness complained of pain in the foot and ankle, which gradually became more severe, in spite of the free administration of morphia hypodermically.

24th. Passed a very bad night, the pain in the foot and ankle being almost unbearable. The foot and ankle are cold, and the instep and external surface of the foot are livid. Gentle frictions ordered at intervals during the day, and hot bottles to surround the extremity outside the cotton batting, the thickness of which is increased.

27th. Gangrene of the foot has slowly but surely developed since last date. Pain ceased two days after operation. The dressings were removed from the thigh on the 27th, and union was found to be complete throughout, with the exception of the points of the emergence of the drains. These were withdrawn, and the wound dressed with iodoform.

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30th. Gangrene slowly extending. Toes are black, hard and dry. Foot black or livid to level of malleoli. Dressing removed from wound, and union found to be perfect.

Nov. . Since last record patient has felt very well, suffered no pain, slept well, and eaten well. The gangrenous process has slowly developed and extended. The whole foot was shriveled, dry and hard. The ankle and leg for two inches above the malleoli were livid. No distinct line of demarcation, but it was decided to amputate, without further delay, sufficiently high to secure sound tissue, and sufficiently low to give a good stump, i. e. at the junction of the upper and middle third of the leg.

The patient was ordered a hypodermic of ten minims of Magendie's solution, and ten minutes afterwards ether was administered. He took the anæsthetic very badly, struggled a good deal at first, and later the limbs were rigid and trembled violently. In twenty minutes, after using eight ounces of ether, anæsthesia was complete, and I proceeded to operate. The Esmarch bandage was used, instruments were soaked in a five per cent. carbolic solution, hands cleansed in a 1-1000 bichloride solution, the skin of the leg and thigh scrubbed with soap, then with alcohol and turpentine, and afterwards with the 1-1000 bichloride solution. The latter solution was used profusely as a douche during the whole operation, in place of the spray. The sponges were new, and had been cleansed with hot water and soaked for twenty-four hours with the 1-1000 bichloride solution. All bleeding points were secured with carbolized cat-gut, flaps were united with silver wire, rubber drainage tube inserted, iodoform applied freely to line of incision, and the stump dressed with bichloride gauze and salicylated jute. Some delay in closing the wound was caused by profuse venous oozing, more than is commonly met with after the use of the Esmarch bandage. When the dressing was completed the pulse and respiration were good. The patient was taken from the operating table on a stretcher to an adjoining room, and put to bed. In a moment afterwards it was noticed that respiration had ceased. All the ordinary means of resuscitation failing, I immediately instituted artificial respiration by Howard's method, which was kept up continually by myself, Asst. Surgeon Edis, and Dr. J. P. Arthur, of Laredo, who was fortunately present to relieve me when exhausted, for over an hour before the first respiratory effort was made on part of patient. The pulse from the very first was full strong and regular, becoming small and rapid only when the efforts at artifi-

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cial respiration were for a time intermitted. The extremities were warm, the face had a good color and expression, there was not the slightest evidence of shock. and, in short, the patient would have been considered to be in a perfectly satisfactory condition except for the fact that he would not breathe. There seemed to be lacking only the impulse from the respiratory centers. The throat and chest were perfectly clear; there had been no undue secretion of mucus, and no evidence whatever of obstruction to respiration, until without the slightest warning he ceased to breathe. The pupils were very markedly contracted, so much so that it immediately occurred to me that this sudden failure of the respiratory centers might be due, in part, to the morphine which had been given hypodermically just before the operation was commenced.

Subsequent investigation has convinced me that I was right in the supposition. The acting Steward who administered the morphia used at the time a syringe with which he was not familiar. The graduations on the piston represented each three minims instead of one minim, as in the ordinary syringe, and although the Steward very naturally denied it, I am satisfied that in his hurry and excitement in preparing for the operation he gave the patient thirty minims of Magendie's solution, instead of ten minims, the quantity he had been ordered to give, and which the patient had been for some time previously accustomed to take. At any rate, I at once gave a hypodermic of atropia, and repeated it at intervals until voluntary respiration was resumed. Digitalis and whiskey were administered in the same way, with a view to forestalling heart failure, which was momentarily expected to take place. How much these last two remedies contributed to the recovery which ensued I am unable to say, for the heart never flagged, and from first to last the circulation, even in the remote extremities, was perfect, thus giving rise to that feature of the case which at the time was the most striking and singular, that is, the good color, warmth and natural feel of the skin, and particularly the placid and natural facial expression; the livid and death-like appearance which is so often seen in respiratory failure during ether narcosis being entirely absent.

For one hour and thirty minutes artificial respiration was carried on, until at last the application of ammonia to the nostrils provoked a feeble voluntary effort at respiration, followed after the lapse of several minutes by another, and then at decreasing intervals by others of progressively greater depth and force, until finally, to my infinite grati-

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fication and relief, natural respiration was established, and the patient was safe. In five minutes more he had regained consciousness, and was asking questions in a perfectly rational manner and in a natural tone of voice, the hebetude which generally characterizes the awakening from an anæsthetic being entirely absent. He was quite drowsy, however, and soon fell asleep and slept for about an hour, when he awoke bright and cheerful, and apparently nowise worse for the operation or the attendant of circumstances.

The subsequent history of the case was uneventful, the wound pursuing a thoroughly aseptic course, and, though there was some little sloughing of the flaps, healing eventually with the formation of an excellent stump. The patient is now wearing an artificial leg and attending to his duties as foreman of a railroad gang, apparently as well as ever he was in his life.

The points of special interest in this case which have induced me to record it are these:

The sudden appearance and rapid growth of the aneurism, without a history of previous traumatism, disease, or other assignable cause.

The adhesion between the femoral artery and its sheath as being possibly an index of the condition of the other arteries of the limb, and pointing to the cause of the gangrene which followed the ligation.

The sudden and complete suspension of the respiratory centers, and its long duration.

The probability that the administration hypodermically of a large dose of morphia was the cause of the failure during the subsequent anæsthesia from ether.

The value of persistent and long continued efforts at artificial respiration in case of cessation of that function from the effects of ether or opium, or both combined.

The intimation that the prevalent custom of giving a hypodermic of morphia, even in moderate doses, just before the production of ether anæsthesia, may not be so devoid of danger as is currently believed, and that an agent which, like opium, tends most markedly and decidedly towards depressing and inhibiting coördinated respiratory functions of the medulla, should be given with caution, if at all, in conjunction with another agent whose most dangerons action is exerted upon the same function and is manifested in the same way.

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RANDOM THOUGHTS ON DOSE DISPENSING.

By A. B. SOMERS, M. D., Jericho, Vt.

My experience as a physician having been entirely confined to a country town, where I have been under the necessity of dispensing largely what I prescribed, the thoughts that I may present at this time will be more practical to such physicians as may be similarly situated, than to those that practice in our larger towns and cities.

When first sent out by my *Alma Mata* armed with the required sheepskin as a certificate of my qualifications, I went forth to minister to the sick with a firm and steadfast faith in the power of drugs to conquer and destroy that enemy of mankind, *disease*, and is it necessary for me to add that I felt, as I think most young physicians do feel, that the honor and dignity of the profession required that I must administer the orthodox remedies in at least medium sized doses, as laid down by my honored instructors and the text books in my profession; and that my first great duty was to recognize disease and deal out the required amount of medicine, while it was the patient's duty to take whatever I might leave according to directions, and get well. But, alas for the frailty of human hopes, I found altogether too soon that I was getting the reputation of being an exceedingly poor cook, and that many of my doses a well stomach would have refused to take, say nothing about their being tolerated by the sensitive gustatory and gastric nerves of a sick person. And I learned very soon that dose dispensing is as much an element of success in the practice of medicine as dose prescribing, or, in other words, it is quite as essential that a physician, in order to be a successful practitioner, should prescribe remedies at once easy of administration and absorption.

Our Homœopathic brethren have quite too long had the advantage of us in the ease with which their granules and solutions can be administered, even if they have lacked somewhat in the administration of appreciable doses, more especially in the case with children and women, and yet there are also many of the sterner sex of adult growth that desire to have their pills sugar coated, and all doses made easy to take. While speaking of Homœopathy, I have no sympathy whatever with the infinitesimals of Hahnemann, and for the most part it seems to me the Homœopathic profession of the present day have not any in theory, but

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at the same time as the years go by I have more and more reason to respect the effect of small doses of medicine often repeated. If some of my older friends are skeptical on this subject, let them try the effect of small doses of tarter emetic (gr. $\frac{1}{100}$ to $\frac{1}{50}$), in a case of acute bronchitis, with high fever, repeated every half hour, for from twelve to twenty-four hours, and see the direct sedative effect it will have on the mucous membrane of the lungs and air passages, accompanied by lessening of frequency of pulse, and diminution of temperature; or in a case of acute dyspepsia, usually denominated bilious attack, with fever, try the effect of calomel gr. $\frac{1}{10}$ alternated with ipecac gr. $\frac{1}{10}$ and bicarbonate soda gr. $\frac{1}{2}$ to gr. 1 every two hours, and see how a single grain each of calomel and ipecac, with less than ten grains of soda bicarbonate, will reduce the temperature and produce even more copious discharges of bilious matter than we are in the habit of getting from large doses of calomel or vegetable cathartics, without any of the griping and uncomfortable symptoms usually accompanying the powerful doses; or, to illustrate further, try in the first case of hepatic colic or severe pain you meet with, the almost magical effect you will get from morphia gr. $\frac{1}{20}$ to gr. $\frac{1}{40}$ combined with tartar emetic gr. $\frac{1}{50}$ to gr. $\frac{1}{100}$ and administered every five minutes. Hypodermics of morphia in much larger doses is scarcely more effective.

Another thought quite to the point is the presentation of remedies in a soluble form, or a form in which it may readily be taken up by the absorbants, for the fact that a given amount of medicine has been taken into the stomach is not proof positive that it will have any effect on the patient. It appears to me that the question of dispensing medicine in an elligible form is quite too much left out of the teaching in our medical schools, so that the young M. D. has to learn from experience the importance of palatable remedies.

The tendency of the day is undoubtedly so far as practicable towards dispensing medicine in pill form, and we have the country flooded with soluble pills, sugar coated pills, gelatine coated pills, parvules, granules, etc., each manufacturer claiming for his pill or granule a special process of manufacture and coating making it specially easy of administration and solution. After having used pills very largely for several years, with varying success, I must say that after repeatedly finding pills in the excretia of patients either partially or wholly undissolved, and also often administering pills to patients for a time without effect and afterward getting immediate effects by giving the same remedies in solution,

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I am always more or less skeptical of medicine in pill form, and yet pills are very convenient both for dispensing and administration. On the whole, I prefer gelatine coated pills to any others, but there is another element that enters into the solubility of pills quite as much as the coating, namely, the solubility of the pill mass itself, and I have got to be quite wary of pills made of resins and solid extracts, more especially the alcoholic extracts; so also I find some salt like the acetate, muriate or sulphate more certain in its effect than a pure alkaloid.

In the *Medical Record* for March 9, 1878, and March 25, 1882, appear two papers by Robert M. Fuller, read before the New York Academy of Medicine, on "*Dose Dispensing Simplified*," in which he describes under the head of *Soluble Tablets*, *Tablet Triturates* and *Pill and Tablet Saturates*, a process of preparing medicines with *sugar of milk* that is especially valuable.

The *tablets* consist of certain medicines made into a paste with sugar of milk and alcohol or water, and compressed; the pill and tablet saturates are merely porous pills or tablets made of sugar of milk, intended for saturation with any drug in a fluid form.

This plan of dose dispensing seemed specially adapted to the Homœopathic idea of dosing, and was immediately taken up by their leading pharmacy, and we now have presented to us a list of *dosimetric tablets triturates* composed of *simples* numbering one hundred or more, to say nothing of triturations and dilutions *ad infinitum*. At this point it may be of interest to the gentlemen present to know something of the size dose employed by the Homœopathic profession in this form. I quote from a *Homœopathic Price Current*. Arsenious acid gr. $\frac{1}{100}$ to gr. $\frac{1}{10}$; aloin, gr. $\frac{1}{10}$ to gr. $\frac{1}{8}$; atropia sulphas, gr. $\frac{1}{200}$ to gr. $\frac{1}{50}$; Corrosive sublimate, gr. $\frac{1}{100}$ to gr. $\frac{1}{10}$; morphia sulphate, gr. $\frac{1}{100}$ to gr. $\frac{1}{4}$; podophyllin, gr. $\frac{1}{100}$ to $\frac{1}{4}$; strychnia, gr. $\frac{1}{100}$ to gr. $\frac{1}{16}$; and other drugs in proportion.

At the present time there are druggists in New York that have adopted this method of preparing medicines, and also make many valuable combinations, such as *olain*, *strychnia and belladonna*, *iron*, *arsenic and ignatia*, *Dover's powders*, *Co. Cath. pill*, and will manufacture to order any private powder of physicians.

Tablet triturates may be highly recommended, first on account of their being *very soluble*. The drug being thoroughly triturated with sugar of milk and compressed in an uncoated condition, is even more soluble than in the untriturated condition. Second, *convenience of ad-*

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ministration; in this particular they rank with all pills and granules. Third, cheapness; the blank tablets may be purchased for twenty-five cents a thousand, while those made of the comparatively inexpensive drugs cost only one dollar a thousand, put up handsomly in glass stoppered bottles, with discounts when ordered in larger quantities.

The amount of medicine contained in a tablet is not large, in most cases not more than one grain, and they are not so absolutely tasteless as coated pills, but notwithstanding these slight drawbacks I think most physicians will find in *tablet triturates* a valuable addition to their list of preparations for dose dispensing.

PREPARED MEDICINE.

By C. F. CAMP, M. D., Barre, Vt.

Perhaps no words are more familiar to the Medical Profession than prepared medicines; it is certain that there are no two words which convey so much to the public, and so little to the faithful physician. One cannot take up a paper of to-day, either secular, religious, or medical, but what his attention is arrested by the advertisement of some remedy which has been discovered by a Heavenly endowed person, who, after years of patient toil and long suffering, has upon the eve of despair been able to produce. These golden discoveries are all sure to cure every ailment known to man, from Hemicrania to Corns and Bunions, of every type and variety.

The birth and development of these wonderful preparations belong not alone to modern times, and some of the methods employed to dupe the public and profession are the most ingenious products of the human brain. Yet sometimes it seems that these golden discoveries are essential to allay the ever increasing symptoms that are caused by some unexplainable bacillus, which can only be seen by Koch, Fresenins, or some of the many bacteriologists, which to them appear as large as did that wonderful umbrella to Caudle in his dream.

Therefore we should not be too early in blaming the public for accepting these apparent boons, when we are just as prone to drink in a bauble as those whom we pity for the lack of knowledge of these

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things, and while we should be a teacher in such matters we too often assist them to the very thing against which we are in duty bound to warn them.

Many is the time that we are importuned as to our views of the merits of a certain proprietary medicine, and when they get an honest physician's opinion the hands of holy horror are held up before him; he is told that Dr. A. has prescribed the very same thing for Mrs. B., and I am precisely in her condition. Fellow practitioners, what can one say in the face of such evidence of indorsement by the profession, or, at least by some of its representative members?

Not unfrequently are we shown circulars which have the recommendation of physicians holding the highest places in the profession and esteem of the people, as to the usefulness of its advertised wares. I do not wish to be understood as condemning all prepared medicines of which I know nothing, but rather those of which I am not allowed to understand the preparation, the secrets of which would, if divulged, at once rob them of their efficacy, and show by their combinations that they were not dictated by a physician, and many of them are shorn of brain altogether.

For example, were one to follow the directions of dosage as indicated by the instructions upon Warner's Safe Kidney Cure, (which has been so ably discussed in this society by our esteemed friend Dr. Fassett,) I am sure that this very fashionable medicine would by its poisonous doses of Nitrate of Potassium prove the bane of its consumer.

Who would expect to see in a case of Diabetic Mellitus the large amounts of sugar rapidly disappearing by giving from 60 to 90 grains of Potassium Nitrate daily? Or, would you lessen the albumen and casts in Albuminuria by such dosage? Why then do we stand listlessly by, and see those whom we should guard constantly duped by these things? I am sorry that we ourselves encourage the practice by our prescriptions. How common it is for us to see in our daily practice Digestylin, Tongolin, Alteris Cordial, etc., which have been prescribed by our neighboring physicians for indigestion, rheumatism, and uterine affections. Now to say that the public loves to be humbugged when they are taught by physicians that these things are of importance, and in their cases by the prescriptions they indicate that they are the most commendable remedy within the knowledge of the prescribing physician, should our patient meet a friend the next day in his or her condition, ought we to blame them for doing precisely what we did the

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day before? Thus it is, I think, that we ourselves are prone to educate the public to use these remedies which we condemn them for. Were we to study the effects of our old remedies more faithfully, and use them more constantly, we would, I think, have less trouble with quackery then at the present.

I often think the reason we grasp so eagerly at new remedies is that we lack a proper understanding of the indications of those remedies in disease which we now possess; for example, physicians in general are almost sure if a patient calls with indigestion to prescribe some preparation of Pepsin, when in fact Pepsin may not be indicated at all, and the indigestion occurs after the food has passed the stomach; so our Pepsin fails to fill the indication, and the Doctor is disgusted with that remedy and the patient with the prescription. Therefore he tries Mandrake Bitters, or Digestylin, or perchance some of Dr. Carter's Little Liver Pills, and after a thorough cleaning out reports himself, as he thinks, all right to the physician, who doubts not in the least his own ability in diagnosis, but seriously doubts the efficacy of Pepsin. After a few blunders like the example, he discards Pepsin altogether in indigestion, and for his regular daily practice takes up Digestylin, Carter's Pills, and Mandrake Bitters; consequently, in one or two years the people in his vicinity know as much about indigestion and its treatment as Dr. Bungler or Dr. Carter.

I wish now also to say a word in relation to remedies in general use. Our daily remedies are many of them unsatisfactory by reason of their uncertain strength, and from their use our failures get us into the practice of quackery, and to obviate this I have a few suggestions to make; in so doing I do not wish to be understood as advocating the practice of Homœpathy. In selecting remedies we all, or all should, endeavor to get the very best, and so far as my observation goes there are none so pure and reliable as those manufactured by Boericke & Tafel, of New York. Many of us have been alarmed at the effects produced from the use of Hydray. Cum. Creta., from its deterioration. In my early practice, when I could ill afford to make mistakes, I procured as I supposed a fresh supply of mercury and chalk, and the same day prescribed it for two patients; happily they vomited it and no serious results followed, save a severe diarrhœa for two or three days. Thus I was forced to drop a remedy which I thought a great deal of, simply on account of its uncertain strength; when one of our brightest practitioners in the state, Dr. Bigelow, of Barre, suggested that Mercurious

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Vivus was free from such effects. he having used it many years with always good results. Were it no better than the old Chalk Mixture, it is much more elegant in appearance and taste, and to this we cannot longer be neglectful if we would attain to the fullness of our expectations.

Much of the success of our Homœpathic neighbors largely depends upon the superiority of their remedies, as compared with ours. We are aware that nearly all of our tinctures are made from dried and worm-eaten materials with diluted Alcohol, which, when filtered and allowed to stand, leaves a large amount of useless sediment, that not only renders the preparation unseemly but often unpalatable.

If one would study the methods employed in the preparation of remedies as given by Boericke & Tafel in their American Pharmacy, there would I think be less trouble from doubting the superiority of their remedies. Not only are they reliable in point of elegance, but, above all, they are of uniform strength, a fact which a physician can ill afford to ignore.

Again, our Homœpathic neighbors is enviably successful, in that he not only thoroughly studies the action upon the system, but, what is of more importance to both himself and patient, he does not either from lack of knowledge of, or faith in, leave his honorable moorings in a safe harbor, and allow himself to be blown by the winds of therapeutic ignorance into the open and tempestuous sea of patent and prepared medicines. And he who who will so demean himself as to prescribe medicines of which he knows nothing, save by testimonials, is at least either a man whose brain is too lazy or too weak to work out the more enobling problem of prescribing as the individual case may require.

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A CASE OF ERYSIPELAS OR MALIGNANT PUSTULE.

By S. PUTNAM, M. D., Montpelier, Vt.

Sunday morning, June 20, 1886, was called to see G. S. L., aged 19 years, and the history obtained was that since vaccination, the previous September, he had been troubled with boils, many of which did not mature, and on Saturday, the 12th of June, he noticed a pimple on his cheek and supposed another boil was coming, but felt all right and ran quite a distance to a fire on that day, becoming fatigued thereby. Sunday did not complain. Tuesday, rode quite a distance; pimple sore, but appetite and sleep good.

Wednesday did not rise as early as usual; did some work through the day, but felt much fatigued; face more swollen; at night had a poultice applied, but "did not sleep a wink."

Thursday did not eat, the attempt hurt his face; kept about through the day, but at night was slightly delirious, and on Friday morning complained of the cold and that his bones ached all over him, the temperature during Thursday afternoon and night having fallen several degrees. At this time a little matter was first noticed on the poultices when removed from the face.

Saturday morning the parents first perceived that the boil, as they called it, differed from those he had been troubled with, the inflamed surface being purple and more extended; a physician was now first called.

Sunday morning, the 8th day since the pimple appeared, I found the patient with a pulse of 120 and a temperature of 105°, tongue furred, and having upon the right cheek a purplish flat pustule or bleb, discharging a little thin, bloody, dirty looking matter from a ragged central opening around which had extended diffuse inflammation, the more active border reaching to the right eye and angle of the jaw, nearly; and near this line two or three small red pimples were noticed. About these pimples or the original "boil" there was little or no hardened basis, as in malignant pustule, or deep hard swelling of the cellular tissue. Incisions did not seem to be required, and the stage for cauterizations, if at any time proper, had evidently passed, the system being already thoroughly poisoned.

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Saturday night had been very delirious, opens his mouth and swallows with great difficulty, spine and neck stiff, sweats constantly, had slept none for thirty-six hours, and continued with only a few moments through Sunday night; and Monday morning had a turn in which those present supposed him dying. This turn I understood from them was an attack of general spasms, as occur in tetanus. Subsultus had been very marked, and within twenty-four hours precursors of tetanus had appeared. Temperature 102°, pulse below 100 at this time. Face more swollen, right eye nearly closed, and jaws can be moved very little. Patient is moved in bed with difficulty, slight movement or effort seeming to excite rigidity or spasm, and during Monday and the night following he had great difficulty in swallowing, with a tense or rigid condition of the muscles, at times attended with general spasms and sweating.

Tuesday A. M. case seemed nearly hopeless, constantly delirious, pulse rapid and weak, swallowed little or no nourishment or stimulants. Nourishing and anodyne enemas were used, the patient passing quietly away at 7 P. M., the eleventh day since the primary pimple appeared, and the sixth day after he took his bed.

Gentlemen, was this a case of erysipelas and blood-poisoning, with meningitis or tetanus supervening, or a case of anthrax or malignant pustule? The microscope not being used, I suppose the scientific men of to-day would not accept as positive a diagnosis of malignant pustule which did not demonstrate the presence of the anthrax bacillus.

James Low, a late authority in Pepper's system of practical medicine, says malignant pustule is distinguished by its commencing from a minute red point with dark centre, and by its progressive extension from this point. Symptoms usually set in within twenty-four hours after the inoculation of the poison, though it is alleged that the inoculation may be extended to 12 or 14 days. Itching draws attention to a small red point like a mosquito bite, but with a black central point. This speedily increases to a small rounded swelling (papule), and in 15 hours is surmounted by a minute vesicle with dark red or bluish contents. From the size of a millet seed this increases to that of a pea, and in 30 hours bursts spontaneously or under friction, and forms a dark red, indurated, comparatively painless nodule (parent nucleus Virchow). The adjacent skin shows a swollen areola livid and red, on which there appear vesicles similar to the first, which pass through the same stages, burst, and leave a livid, hard, or doughy gangrenous surface.

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The diseased part now becomes the centre of an œdematous swelling, which may invade the entire arm, face, or neck, and is attended with more or less constitutional symptoms. The pyrexia, at first slight, often reaches a high grade, attended with occasional chilliness, pains in the back and loins, great prostration, languor, dullness, and even delirium, with cold sweats, anxiety, dyspnœa, and at times muscular spasms.

I have seen two fatal cases of undoubted malignant pustule, and two cases supposed to be that disease in the forming stage. In the first two cases the primary pimple was not regarded as significant and malignant, sloughing œdema speedily extended over the side of the face, accompanied by febrile action, delirium and great prostration. The first case proved fatal in four or five days, and the second case seen by me in consultation was encised and cauterized several days after the attack without effect, the tissues being dark and honeycombed with pus, and fatal on the 7th day; both were young farmers 18 or 20 years old. The two cases early incised and cauterized by me were young women of the working class, and presented pustules equally threatening situated on the upper lip, but healed by local sloughing and granulation without constitutional symptoms of moment.

One thing noticed about these pustules was that they had a firm, hard base deep in the skin, and when incised cut like carbuncle, having cells filled with purulent secretion, and my rule has been to recommend incision and cauterization for pustules, particularly when situated on the face, and having a firm, hard base. In the case of G. S. L. no firm base or special hardening of the tissues was noticed. A pimple first appeared on Saturday, June 12, and until the 19th this was believed to be a boil like those to which the patient had been subject. Friday, the 7th day of the pimple, a little matter appeared on the poultice. The day and night following a sudden fall in temperature occurred; the patient had a bad night, ached all over, and Saturday morning the nurse saw that the "boil" was worse, the inflammation of a purple hue and extending further out, and then first sent for a physician.

The character of the case, I believe, changed about this time, assuming all the malignity of a bad case of traumatic erysipelas, or cellulitis, in consequence perhaps of the previous bad state of the patient's system: the fatigue at the first of the attack induced by running at the fire as before mentioned, or perhaps the sudden change of the weather on Friday. At any rate, for some reason his health had been deranged for some time, and under the circumstances shown at the time needed only

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an exciting cause which the supuration upon the face (a dangerous locality) afforded. Erichson says the principal exciting cause of erysipelas is a wound, and when once present it may extend itself over any continuous surface, the skin, the cellular tissue, the mucous and serous membranes, or the lining membrane of the arteries and veins, also the membranes of the brain.

Indeed, not only must we look upon erysipelas as a disease that may affect any surface external or internal, but we must consider the constitutional disturbance that takes place in erysipelas as the essential disease. This, it is true, is usually complicated with diffuse inflammation of the integuments, and then constitutes one of the ordinary forms of erysipelas. But a constitutional fever of precisely the same type may occur as that which we observe to precede and accompany the local inflammation without any such complication discoverable.

This being admitted, we are able at once in this case to account for all the symptoms presented, even the tetanic, or mennigeal symptoms. Perhaps the most valuable lesson to be drawn from this sad case is that earlier council and medication should have been sought, when pure air, dietetics, tonics, alteratives, and baths might have acted as preventives.

LIGATION OF FEMORAL ARTERY AND VEIN.

By C. F. CAMP, M. D., Barre, Vt.

July 12 I was called to see Joseph Turcotte, a Frenchman, 28 years of age. Found a wound in left thigh about four inches below Poupart's lig., extending downwards and inward about three inches, passing obliquely between femoral artery and vein, slitting both, though severing neither entirely. Dr. C. M. Chandler was called, and, assisted by Drs. Packer and Lane, of Barre, succeeded in ligating both artery and vein after extending wound to the size of about 6 inches; the wound was then closed, patient put upon his back. I visited him daily, with the following results:

2nd day. Leg warm not swollen. sensibility good, pulse weak, tem. 99°, tongue slightly coated, bowels normal, did not look at wound.

3rd day. Pulse weak and frequent, tem. 100°, tongue white, bowels did not move, gave him Merc. Viv., did not look at wound.

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4th day. Pulse, tem., tongue, and bowels same as 3rd day, gave Merc. Viv., Rhei and Spts. Nit. Dulc. Dressed wound, seemed healthy.

5th day. Pulse good, tem. natural, bowels moved morning and evening. Kidneys acted more freely, spirits more elevated, appetite fairly good.

6th. day. Pulse and tem. normal, tongue furred slightly, bowels moved twice, appetite good, gave no medicine, save little Cinchonia bark, dressed wound, suppuration profuse but healthy, no inflammation, no œdema, no pain, patient asked to smoke.

7th day. Patient same as the day previous, save bowels did not move, gave Merc. Vivus., dressed wound, stitches gave away, straps held wound, dressed wound three times daily.

8th day. Patient same as day before, bowels moved, kidneys acted well, tem. and pulse natural, no swelling of leg, no pain.

9th day. Patient continues same, no change save continual gain, wound fills fast, patient feels strong, sits bolstered the same as the previous three days.

10th day, Saw patient in the morning, was the same as the 9th day, seemingly all right, leg, tem., pulse, tongue, bowels and kidneys all doing well. 3 o'clock P. M. was called to see him, found he had been having chills, two in number, begun first one at noon, pulse 130, tem. 104°, respiration 30 and 40 per min., pain in leg below knee on posterior side, diagnosed Phlebetis, placed limb on an inclined plane, put cotton wadding and hot bottles about it, gave Aconite 8 gtts. to goblet two-thirds full of water, teaspoonful once an hour, saw him in the evening, tem. same, pulse softer.

11th day. Morning tem. 102°, pulse 120, pain less in leg, though leg had swollen quite a good deal, was hard and tender, continued treatment. 12 M. saw patient again, was about the same as A. M., bowels moved, leg less painful. 6 P. M., patient restless, gave cool soda bath.

12th day. 9 A. M., patient rested after 11 last night, was much refreshed, tem. 101, pulse 120, resp. 20, ate fair breakfast of toast and beef. 6 P. M., patient feeling pretty good, had smoked twice during the day, bowels moved, kidneys acted well.

13th day. 9 A. M., tem. 100°, pulse 90, rested well last night, leg did not pain him, calf seemed flabby, foot œdematous, action in ankle and toes fairly good, patient about the same for several days, gains a

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little each day without any other treatment than that indicated, wound entirely healed.

24th day. Had chills, pain in leg returns, tem. 104°, pulse 120, same treatment as before.

25th day. Leg swollen and tender, applied poultices of Flax seed meal and Lobelia, pain subsides, swelling continues, diagnosed abscess.

28th day. Opened abscess on anterior surface of leg at middle third, near tibia, discharged freely, still the leg seemed hard on posterior side, continued poultices.

30th day. Opened leg on posterior surface at lower third, discharged laudable pus to the amt. of 14 oz., leg discharged from the two openings continually, no swelling above the knee.

40th day. Opened another abscess near the knee, which discharged freely for ten days, at which time I went on a vacation and the case went into Dr. Packer's care, and I am informed by him that upon Sept. 13, or the 62nd day, he opened an abcess in the calf which discharged 32 oz. of healthy pus. Patient remained in his usual strength upon a good nourishment, though he has much pain in knee, which is swollen badly, and very tender, poultices of Flax seed meal and Lobelia were applied, advancement slow. I saw the case again Sept. 16, or the 66th day and found the knee somewhat improved though yet swollen and tender, gave him good nourishment, eggs, beef, brandy, and decoct. Cinchonia bark, kept bowels well open, leg slowly improved.

Sept. 28, or the 78th day. Consigned him to Mary Fletcher Hospital, and I am informed by the surgeon in charge that "upon the 3rd inst. or the 83rd day, he opened an abcess in the front part of the left thigh near the site of the wound; save this there has been no change since he came to Hospital, though he has gained slowly during his abscess. His treatment since andmission to H. has been nothing but tonic and limb supported in a comfortable position."

October 15, 1886.

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In Memoriam.

ANDERSON DANA DYER, A. M., M. D., BRANDON, Vt.

Born Jan. 3, 1859; read medicine with his father, Dr. O. G. Dyer, of Brandon; graduated at Bellevue Hospital Medical College, 1883; became a member of the Vermont Medical Society October, 1885, and was Counsellor from Rutland County at the time of his death, which occurred at Brandon, April 11th, 1886. Dr. Dyer was very popular; a man of rare promise and tact, suddenly cut down in the flower of his youth.

SAMUEL J. ALLEN, M. D., WHITE RIVER JUNCTION, VT.

Born in Newport, N. H., Jan 8, 1819; graduated at Castleton, Vt., 1842; was a surgeon in the war for the Union. and a practitioner of note; died July, 1886, aged 67 years.

MARCUS IDE, M. D., SAXONVILLE, FRAMINGHAM, MASS.

Born in Calais, Vt., March 7th, 1827; studied medicine with Dr. Deming, of Calais, and graduated at Dartmouth in 1856; became a member of the Vermont Medical Society in 1880; practiced twenty years in Calais, during the last nine years of which he was Town Clerk and Treasurer; in 1874 moved to Stowe and practiced ten years, when failing health induced him to seek a more concentrated practice, which he secured at Framingham, where he remained until he died December19, 1886. Dr. Ide was a genial man, and a careful practitioner.

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TRANSACTIONS

OF THE

BOSTON MEDICAL LIBRARY ASS'N. MAY 19 1888

VERMONT STATE MEDICAL SOCIETY

FOR THE YEAR 1887.

PUBLISHED BY THE SOCIETY.

ANNUAL MEETING THE FIRST THURSDAY AND FRIDAY AFTER THE SECOND WEDNESDAY IN OCTOBER, AND THE SEMI-ANNUAL MEETING THE LAST THURSDAY AND FRIDAY IN JUNE, AT SUCH PLACE AS DIRECTED AT THE PRECEDING ANNUAL MEETING.

MONTPELIER, VT.:
ARGUS AND PATRIOT BOOK AND JOB PRINTING HOUSE.
1888.

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OF THE

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NOTE.—Each article published herein stands upon its own merits, as the expression of its Author's opinion, for which the society does not hold itself responsible.

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PROCEEDINGS

OF THE

Vermont State Medical Society,

1887.

SEMI-ANNUAL MEETING.

The semi-annual session of the Vermont State Medical Society was held in St. Johnsbury on the 25th and 26th of June.

The meeting was called to order at 10:30 A. M., by the President, Dr. S. T. Brooks, of St. Johnsbury. Prayer was offered by the Rev. Mr. Davidson, of St. Johnsbury.

The Secretary read the records of the last meeting, which were approved as read.

Dr. T. A. Foster, of Portland, Me., a delegate from Maine Medical Association, was very cordially received, and invited to participate in the deliberations of the society.

A telegram from Dr. Richard J. Dunglison, of Philadelphia, Penn., chairman of the Finance Committee of the International Medical Congress, asking for a subscription for the support of the congress, was read by the Secretary.

Action upon the matter was deferred until the afternoon session.

Adjourned to 2:30 P. M.

AFTERNOON SESSION.

Met at 2:30 P. M.

Dr. L. W. Hanson, of Bradford, Vt., and Dr. C. R. Gibson, of Woodsville, N. H., presented credentials as delegates from the White Mountain Medical Society, and were introduced to the society by President Brooks.

Dr. H. H. Atwater, of Burlington, read a valuable paper entitled "Twelve cases of Placenta Prævia in Private Practice."

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It was moved and carried that when we adjourn it be to 7 instead of 8 o'clock P. M.

Dr. H. C. Tinkham, of Burlington, made some remarks on the "Treatment of Lung Diseases by Gaseous Enemeta," and exhibited the apparatus for generating and administering the gas.

Dr. S. T. Brooks read a paper on "Acute Peritonitis."

Dr. T. A. Foster, of Portland, discussed the subject, and related his experience in three epidemics of Puerperal Peritonitis.

On motion the society adjourned.

EVENING SESSION.

The society was again called to order at 7:30 P. M.

Dr. R. T. Johnson, of West Concord, the Vice-President of the society, delivered the usual semi-annual address, entitled "Some methods of forming Prognosis of Disease in the Sixteenth Century."

The subject of the present status of our Constitution and By-Laws was brought up by Dr. D. C. Hawley, of Burlington, and the necessity of its revision urged upon the society.

After a brief discussion the President was instructed, on motion of Dr. H. S. Brown, of St. Johnsbury, to appoint a committee of three to revise the Constitution and By-Laws, and to report at the next annual meeting.

The President appointed as such committee Dr. D. C. Hawley, Dr. L. M. Bingham, and Dr. Henry Janes.

The members of the society were invited to a reception at the residence of Dr. H. S. Brown at the close of this session.

Adjourned to 9 A. M.

SECOND DAY, JUNE 24.

Met at 9 A. M., President Brooks in the chair.

Dr. H. A. Crandall, of Burlington, reported an interesting case of Jaundice, and exhibited eighty gall-stones which were removed at the autopsy.

Dr. D. C. Hawley reported a case of "Fracture of Rib, caused by Muscular Action while Vomiting."

In view of the serious illness of Dr. S. Putnam, the Treasurer of the society, Dr. D. C. Hawley was elected Assistant Treasurer for the balance of the current year.

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The Secretary was instructed to convey by letter to Dr. S. Putnam and Dr. O. F. Fassett the sympathy of the society for them in their illness.

The society voted to make no appropriation for the International Congress.

Programme for the October meeting was reported as follows:—

Essay,	J. S. RICHMOND
Therapeutical Memoranda,	H. D. HOLTON
Report of Case,	C. M. FERRIN
Report of Case,	F. H. CILLEY
Report of Case,	D. F. RUGG
Biliary Calculi,	F. L. LADUE
Essay,	C. F. BRANCH
Intubation of Larynx,	J. B. WHEELER
Spinal Meningitis,	JOEL ALLEN

During the two days' meeting the following physicians were elected to membership:—

H. S. CARVER, Marshfield,	U. V. M., 1884.
R. W. GREENE, Lunenburg,	Bellevue.
J. E. HARTSHORNE, St. Johnsbury,	Bellevue.
H. L. NEWELL, St. Johnsbury,	U. V. M., 1886.
E. M. SHAW, Irasburg,	Univ. N. Y.
J. F. WRIGHT, Barton Landing,	Ann Arbor.
C. F. BRANCH, Coventry,	U. V. M., 1878.
F. C. KINNEY, Greensboro,	U. V. M., 1882.
H. H. LEE, Wells River,	U. V. M., 1881.

ATTENDANCE.

Drs. S. T. BROOKS,	St. Johnsbury.
G. B. BULLARD,	St. Johnsbury.
H. S. CALDERWOOD,	St. Johnsbury.
H. S. BROWN,	St. Johnsbury.
H. L. NEWELL,	St. Johnsbury.
J. E. HARTSHORNE,	St. Johnsbury.
H. H. ATWATER,	Burlington.
H. A. CRANDALL,	Burlington.
H. C. TINKHAM,	Burlington.
D. C. HAWLEY,	Burlington.
F. H. CILLEY,	Jericho.

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H. S. CARVER, . . . Marshfield.
H. H. LEE, ... Wells River.
L. W. ADGATE, . . . E. Hardwick.
F. C. KINNEY, ... Greensboro.
T. R. STILES, . . . Barnet.
C. M. FERRIN, ... Essex Junc.
C. F. BRANCH, . . . Coventry.
D. F. RUGG, ... Hartland.
E. J. HALL, . . . Morrisville.
J. F. WRIGHT, . . . Barton Landing.
R. T. JOHNSON, . . . W. Concord.
S. L. WISWELL, ... Cabot.
E. G. HOOKER, . . . Waterbury.
L. W. HANSON, . . . Bradford Delegate.
C. R. GIBSON, . Woodsville, N. H., Delegate.
T. A. FOSTER, . . Portland, Me., Delegate.
Geo. S. GOVE, . . . Whitefield, N. H.
H. P. WATSON, . . . Haverhill, N. H.

Adjourned.

D. C. HAWLEY, M. D., SEC.

ANNUAL MEETING.

FIRST DAY, OCTOBER 13, 1887.

The seventy-fourth annual meeting of the Vermont State Medical Society was held in the new Court room, State House, at Montpelier on Thursday and Friday, October 13 and 14, 1887.

The President, Dr. S. T. Brooks, of St. Johnsbury, called the meeting to order at 10 o'clock A. M.

Prayer was offered by the Rev. Mr. Sherburne, of Montpelier.

The records of the semi-annual meeting were read and approved.

The President appointed a committee of five on nominations, as follows:

DR J. H. HAMILTON, ... Richford.
DR. S. L. WISWELL, ... Cabot.
DR. D. F. RUGG, ... Hartland.
DR. D. G. KEMP, ... Montpelier.
DR. H. S. BROWN, . . . St. Johnsbury.

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The following State Medical Societies were represented by their delegates:—

Massachusetts Medical Society by Dr. Oramel Martin, of Worcester, Mass.

New Hampshire Medical Society by Dr. O. D. Eastman, of Woodsville, N. H.

New York State Medical Association by Dr. H. L. Keith, of West Sand Lake, N. Y.

Dr. S. T. Brooks, Chairman of Board of Censors, reported that licenses had been granted during the year to

A. J. CUSHMAN,	Lincoln, Vt., examined.
H. E. BOGUE,	Fletcher, Vt.
H. A. BOGUE,	Bristol, Vt.
P. ARTHUR DAVID,	Vergennes, Vt.
H. A. CHENEY,	Albany, Vt.
A. F. PECK,	Westford, Vt.
GEO. B HULBURD,	Waterville, Vt.
W. R. PRIME,	Richford, Vt.
CHAS. N. FOX,	E. Corinth, Vt.

The following papers were presented:—

Obituary of E. A. Green, M. D., by B. J. Andrews.

Obituary of S. J. Allen, M. D., by E. F. Upham.

Vesico—Intestinal Fistula, by D. F. Rugg.

Adjourned to 2 P. M.

AFTERNOON SESSION.

Met at 2 P. M.

The following report of delegates to Medical Department University of Vermont was read by Dr. F. R. Stoddard.

TO THE VERMONT MEDICAL SOCIETY,—

Mr. Chairman and Gentlemen:—Your delegates to the Medical Department of the University of Vermont attended the final examination of candidates for the degree of M. D., at the Medical College, on the 13th, 14th and 15th of July, 1887.

Seventy-nine candidates presented themselves for examination, seven of whom were examined on the four preliminary branches only; two others withdrew, and of the remaining seventy, fifty-three passed satisfactory examinations and were given their degree.

The examinations in Surgery and Chemistry were written, and two hours' time were allowed for answering the questions on each branch. We had abundant opportunity to examine the written papers of the

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candidates and their standing as marked by the Professors. Lest any one may think that the examinations were easy in either of these branches, we append hereto a copy of the questions used.

We were present at the oral examinations in Anatomy of twenty candidates, in Physiology twenty-eight, in Materia Medica eighteen, in Practice twenty one, and in Obstetrics and Gynæcology twenty-five.

We were courteously received in every department and given every opportunity to satisfy ourselves in regard to the qualifications of candidates, even to the extent of examining and marking.

The examinations were thorough and practical, and conducted in a manner calculated to ascertain the practical knowledge of the students, and, in the opinion of your delegates, no one received a diploma without first proving himself worthy and well qualified.

We also examined the Preceptor's Certificates and satisfied ourselves that no student was admitted to examinations without first presenting tickets showing that he had attended two full courses of lectures, and also presenting a certificate of *good moral character*, being *twenty-one years of age* and having studied Medicine *three full years*, signed by reputable physicians.

That the Medical Department of the U. V. M. is entitled to the most cordial support of the profession in the State, must be evident to any unprejudiced person who chooses to investigate the advantages that it has to offer students, and, in the opinion of your delegates, it is largely due to the executive ability of the present management that the school numbers among its professors men who occupy a place in the front rank of the profession, and also occupy chairs in the largest medical schools of the country; also that there are so many professors on special branches giving lectures, chiefly clinical, on their respective specialties. Coupling these facts with the clinical advantages offered by the Mary Fletcher Hospital, it is easy to understand how the school has risen in popularity from a class numbering less than fifty in 1869, largely composed of Vermont students, to a class of two hundred, representing twenty-seven States and Territories and Canada, and to a position that is second to none of our metropolitan schools. At no time in the history of this institution has it been so well equipped for thorough work as at the present time.

A marked difference was to be seen in the examinations of students who had attended the preliminary course in addition to the regular courses.

In order that members of the Society may obtain some idea of the examination required, we append to the report the questions in Surgery and Chemistry.

WRITTEN EXAMINATION IN SURGERY.

1. In a stab wound of an artery, at what point would you ligate the injured vessel, and why? How many ligatures would you employ, and what material would you select for a ligature?

2. Give a brief account of Ulceration, Gangrene, Caries and Necrosis.

3. Give the symptoms and treatment of a strangulated inguinal Hernia.

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4. What tissues are divided in the latteral operation for Stone in the Bladder?

5. Give the chief points in differential diagnosis between Hydrocele, Hæmatocele and Varicocele.

6. What means are employed for controlling Hemorrhage during surgical operations?

7. What is Dugas' test for dislocation at the shoulder joint?

8. Give the chief varieties of Fistula of the Anus, with treatment.

9. Name the chief varieties of Club Foot, and state what tendons are shortened in each.

10. Describe an excision at the Shoulder Joint, or an amputation at the knee joint.

J. W. WRIGHT, M. D.

EXAMINATION IN CHEMISTRY.

1. What is the weight of 700 cubic centimeters of a liquid whose specific gravity is 1023?

2. Complete the following equations and correct any errors which they may contain:

$H_2SO_4 + KHO =$

$HNO_3 + CaO =$

$MgSO_4 + Ba(NO_3)_2 =$

$KHo + CuSO_4 =$

$HgCl_2 + AgNO_3 =$

State the proportions by weight necessary in the first equation to secure complete neutralization.

3. Describe the tests for ferrous and ferric salts.

4. Explain the conversion of ethylic alcohol into ethylic ether. Give the properties of the latter. What are simple, mixed and compound ethers?

5. How may arsenic be detected in the urine? What is the antidote for arsenical poisoning, and how is it prepared?

6. Give the formulæ and names of the oxyacids of phosphorus and of their sodium salts.

7. Describe the tests for morphine and for strychnine.

8. Explain the action of CO on the economy and the difference between its action and that of CO_2.

R. A. WITTHAUS, M. D.

In addition to this examination there was a laboratory examination in practical analysis.

Very respectfully submitted,

A. B. SOMERS.
F. R. STODDARD, } Delegates.

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The following report of delegates to Dartmouth Medical College was presented.

TO THE PRESIDENT AND MEMBERS OF THE VERMONT MEDICAL SOCIETY:—

Your delegates to the Dartmouth Medical College attended the examinations of the graduating class November 22 and 23, 1886, and were courteously received.

The candidates for graduation, nineteen in number, had already been examined by the Faculty, and the written work of each, with the markings of the Faculty, was submitted to your delegates. These examinations clearly demonstrated the fact that to obtain a diploma from this College is not easy.

Each member of the class was examined orally by the delegates from your society and from the New Hampshire Medical Society.

So thorough was the training these young men had received that each passed a satisfactory examination.

It appears to your delegates that for many reasons this college merits the support of the medical profession.

Each student receives laboratory instruction in urinary analysis without extra fee.

The instruction in all branches is of a thoroughly practical nature. The time in the lecture room is spent in dealing, not with fascinating hypotheses, but with the teachings of recognized medical authorities and the results of personal observation and experience.

HENRY D. HOLTON, } Delegates from Ver-
ARTHUR B. BISBEE, } mont Medical Society.

Dr. S. H. Griswold, of Rutland, reported as delegate to American Medical Association.

The following papers were read:—

Some Observations on Deafness, by J. H. Woodward.

Pleuritis with Accumulation of Pus in Pleural Cavity, by C. M. Ferrin.

Intubation of Larynx, by J. B. Weeeler.

Biliary Calculi, by F. L. Ladue.

Tetanus Neonotorum, by Edw. R. Campbell.

The Climate and Temperature of Mesopotamia, by D. H. Nutting.

Adjourned to 7:30 P. M.

EVENING SESSION.

Society met at 8 P. M.

Dr. S. T. Brooks delivered the President's annual address.

It consisted of a discussion of the subject of "Public Health and Hygiene," and of "Expert Testimony in the Courts."

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The address brought out a prolonged and interesting discussion, which was participated in by Dr. C. L. Allen, J. H. Hamilton, A. H. Chesmore, H. D. Holton, L. M. Bingham, A. P. Grinnell, Henry Janes, D. H. Nutting, and E. F. Upham.

Adjourned to Friday at 9 A. M.

SECOND DAY.

Met at 9 A. M. with Pres. Brooks in the chair.

Dr. A. P. Grinnell introduced the following resolution, which was unanimously adopted:—

Whereas, The Vermont State Medical Society has for many years been desirous that a State Board of Health be established, and has been in a large measure responsible for the existence of the present Board, and whereas it is well known that the utility of the Board depends largely upon the co-operation of the profession throughout the State, therefore—

Resolved, That this Society endeavor to lend such aid to the Board as lies in its power, by reporting to the Secretary of the Board all cases of contagious diseases coming under their observation, and by furnishing any other information which may be of service to them and to the State.

The report of the Committee appointed to revise the Constitution and By-Laws was made and the report was unanimously adopted, after slight alteration.

OFFICERS ELECTED.

President, E. R. CAMPBELL,	Bellows Falls.
Vice President, S. L. WISWELL,	Cabot.
Secretary, D. C. HAWLEY,	Burlington.
Treasurer, D. G. KEMP,	Montpelier.
Auditor, C. E. CHANDLER,	Montpelier.

EXECUTIVE COMMITTEE.—D. C. Hawley (ex-officio), E. R. Campbell, S. L. Wiswell.

PUBLICATION COMMITTEE.—D. G. Kemp, C. M. Chandler, A. B. Bisbee.

LICENSE CENSORS.—S. H. Griswold, C. C. Perry, F. H. Cilley.

COUNCILLORS.

M. H. EDDY,	Addison	County.
LYMAN ROGERS,	Bennington	"
H. S. BROWN,	Caledonia	"

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F. R. STODDARD,	Chittenden	County.
R. T. JOHNSON,	Essex	"
GEO DUNSMORE,	Franklin	"
F. L. LADUE,	Grand Isle	"
JOEL ALLEN,	Lamoille	"
A. C. BAILEY,	Orange	"
C. F. BRANCH,	Orleans	"
C. L. ALLEN,	Rutland	"
C. F. CAMP,	Washington	"
H. D. HOLTON,	Windham	"
F. T. KIDDER,	Windsor	"

DELEGATES.

American Medical Association.—D. H. Nutting, A. P. Grinnell.

Maine Medical Association.—M. D. Warren, E. J. Fish.

New Hampshire Medical Society.—O. W. Sherwin, C. J. Allen.

Massachusetts Medical Society.—C. M. Chandler, J. H. Woodward.

Rhode Island Medical Society.—E. S. Albee, C. A. Sperry.

Connecticut Medical Society.—J. S. Richmond, C. W. Ray.

New York State Medical Association.—J. B. Wheeler, B. J. Andrews.

Northern New York Medical Association.—G. F B. Willard, F. R. Stoddard.

Connecticut River Valley Medical Association.—M. R. Crain, S. H. Griswold.

White River Valley Medical Association.—John Winch, A. B. Bisbee.

White Mountain Medical Association.—Deane Richmond.

Dartmouth Medical College.—D. F. Rugg, F. H. Cilley.

U. V. M. Medical Department.—S. S. Clark, F. L. Ladue.

The following papers were read:—

"Therapeutical Memoranda," by H. D. Holton.

"A report of a few cases of Lung Disease," by F. H. Cilley.

The death of Dr. S. Putnam, of Montpelier, and of Dr. O. F. Fassett, of St. Albans, were reported to the society by the Councillors, and Dr. J. Draper, of Brattleboro, was appointed to write an obituary of Dr. Putnam, and Dr. S. S. Clark, of St. Albans, an obituary of Dr. Fassett.

The following resolution was offered by Dr. L. C. Butler in amendment of the Constitution:—

Resolved, That the annual meeting in the off year of the Legislature be held in Burlington.

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Dr. H. D. Holton offered the following:—

Resolved, That the annual meeting in the off year of the Legislature be held in such place as the society shall vote at the previous annual meeting.

Both resolutions will, according to the Constitution, lay over until the next annual meeting, for action.

The following new members were elected to membership during the meeting:—

Dr. C. J. Russell, of Hinesburgh, Howard University, 1883.

Dr. L. E. Dionne, of Burlington, Coll. P. & S. of Prov. of Q.

Dr. A. L. Bingham, of Williston, U. V. M., 1875.

Dr. A. H. Chesmore, of Huntington, U. V. M., 1860.

Dr. Ralph M. Canfield, of Derby Line, U. V. M., 1882.

Dr. J. N. Jenne, of St. Albans, U. V. M., 1881.

Dr. H. P. Watson, of Haverhill, N. H., was elected an honorary member.

The Executive Committee made the following report:—

The next semi-annual meeting will be held in St. Albans.

The programme will consist of papers by the following members:—

S. S. Clark, of St. Albans.

J. H. Hamilton, of Richford.

C. J. Russell, of Hinesburgh.

F. R. Stoddard, of Shelburne.

C. L. Allen, of Rutland.

H. S. Brown, of St. Johnsbury.

J. N. Jenne, of St. Albans.

D. C. HAWLEY,
F. R. STODDARD, } Ex-Committee.
L. M. BINGHAM,

ATTENDANCE.

S. T. Brooks, M. D. St., Johnsbury.

H. S. Brown, M. D., St. Johnsbury.

D. F. Rugg, M. D., Hartland.

E. R. Campbell, M. D., Bellows Falls.

S. L. Wiswell, M. D., Cabot.

J. M. Clark, M. D., Burlington.

J. B. Wheeler, M. D., Burlington.

L. M. Bingham, M. D., Burlington.

A. P. Grinnell, M. D., Burlington.

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D. C. Hawley, M. D, Burlington.
D. G. Kemp, M. D., Montpelier.
C. M. Chandler, M. D., Montpelier.
A. B. Bisbee, M. D., Montpelier.
F. H. Cilley, M. D., Jericho.
E. F. Upham, M. D., West Randolph.
C. J. Russell, M. D., Hinesburgh.
B. J. Andrews, M. D., Richmond.
J. H. Hamilton, M. D., Richford.
A. H. Chesmore, M. D., Huntington.
H. S. Carver, M. D., Marshfield.
George Davenport, M. D., East Randolph.
D. H. Nutting, M. D., Randolph.
J. H. Winch, M. D., Northfield.
P. D. Bradford, M. D., Northfield.
A. L. Bingham, M. D., Williston.
C. F. Camp, M. D., Barre.
J. H. Jackson, M. D., Barre.
H. L. Gale, M. D., Barre.
B. W. Braley, M. D., Barre.
F. L. Ladue, M. D., Alburgh Springs.
C. L. Allen, M. D., Rutland.
S. H. Griswold, M. D., Rutland,
C. J. Allen, M. D., Waitsfield.
F. R. Stoddard, M. D., Shelburne.
I. M. Bishop, M. D., Grafton.
C. C. Perry, M. D., Bethel.
W. H. Vincent, M. D., Orwell.
L. C. Butler, M. D., Essex.
R. T. Johnson, M. D., West Concord.
F. T. Kidder, M. D., Woodstock.
H. D. Holton, M. D., Brattleboro.
Oramel Martin, M. D., Delegate, Worcester, Mass.
H. L. Keith, M. D., Delegate, West Sand Lake, N. Y.
O. D. Eastman, M. D., Delegate, Woodsville, N. H.

A vote of thanks was tendered the Sergeant-At-Arms and the railroads for courtesies extended.

On motion, adjourned.

D. C. HAWLEY, M. D., Secretary.

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SOME METHODS OF FORMING PROGNOSIS IN THE SIXTEENTH CENTURY.

By R. T. Johnson, M. D., West Concord, Vt.

Gentlemen of the State Medical Society,—

This compilation from old medical works may be of interest to some of us of the present day. Some of the theories here enumerated were in vogue previous to the year 1600.

ASTROLOGICAL JUDGMENT OF DISEASES.

It is a palpable and apparent truth that God carries men to the principles of grace by the book of the creatures. This is intimated by Abraham Avenezra, an Arabian physician and a singular astrologer, who, in his treatise on critical days, thus begins:—

I entreat the Lord God, that he would enlighten my heart with his light and truth so long as my spirit remains in me. For his light is very delightful and good for the eye of my soul to see by. For so shall the night be enlightened to me as the day; neither shall the clouds shadow it—it shall not be like the light of the sun by day, because it shall not be clouded, nor the light of the moon, because it shall never be diminished as her light is. God has made these lights as he has made man; and he appointed the greater light to rule the day, and the lesser light to rule the night. Hence it appears the sun was made to rule the day, and not wholly to give light to it, and the moon was made to rule the night, not to give light to it only, as appears in Gen. 1st, because she has no light to give. Also he has made the whole host of heaven, the fixed stars and planets, and given them their virtues, together with the luminaries; but their virtues are not so great as the virtues of the luminaries, neither is the virtue of the moon so great as the virtue of the sun, because she borrows her light from the sun. The whole host of heaven, that is, the fixed stars, move all in the same sphere, and therefore their distance and their latitude are always the same, one from the other; but it is not so with the planets, for their course is various, and so is their distance, one from

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the other, and so is their latitude. For sometimes they are upon the elliptic, sometimes north from it, sometimes south; sometimes retrograde, sometimes direct, sometimes in conjunction, one with another; sometimes in opposition, sometimes in other aspects. The reason of this is because the sphere of one is lower than the sphere of the other, and the lower the sphere is the sooner they make their revolution.

The nearest to the earth of all the planets is the moon, and therefore her course is the swiftest, and besides her difference in longitude and latitude there happen other accidents to her which are not visible to other planets; for sometimes she increases, sometimes decreases, and sometimes she is invisible or fails in light. The reason why the planets are not seen horned, as the moon, is because their distance is greater from us. All the planets seem larger the greater their distance from the sun or nearer to the earth. Also, sometimes the moon is eclipsed, but not in the same manner as the sun, for the sun never loses its light, but is only shadowed from a particular people or place by the body of the moon; but the moon eclipsed totally loses her light, and the reason is the sun's light is his own, but the moon's is borrowed.

This being premised, consider that all things under the moon universally, whether men, beasts or plants, are changed and never remain in the same state; neither are their thoughts and deeds the same. Take counsel of your head, and it will certify to you what I speak is true, and they are varied according to the various course and disposition of the planets. Look upon your own geniture, and you shall find your thoughts moved to choler so often as the moon transits the place where the body or aspect of Mars was in your geniture, and to melancholy when she does the like to Saturn. The reason is because the moon is assimilated to the body of man, whose virtue, as well as her light, increases and diminishes, for she brings down the virtue of the other planets to the creatures and to man if he lives upon the earth.

The sun causes heat and cold, day and night, winter and summer. When he arrives to the house of his honor or exaltation, viz. Aries, then the trees spring, living creatures are comforted. The birds sing, the whole creation rejoices, the sicknesses of the body show themselves in their colors. Also, when he arrives at his fall, viz. Libra, the leaves of the trees fall, all creatures are dull, and mourn like the trees in October.

Another reason is also plain. Usually sick people are eased from midnight to noon, because then the sun is in the ascending part of the

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heaven, but they are most troubled when he is descending, that is from noon to midnight.

The course of the moon is to be observed in many operations, both in the sea and rivers, vegetables, shell-fish, as also in the bones and marrow of men and all creatures. Also, seed sowed at the wane of the moon grows either not at all or to no purpose. Wise men have experience of many virtues of the stars and have left them to posterity.

And physicians in old times have found out the changes and terminations of diseases by the course of the moon; wherefore the 7th, 14th, 21st and 28th days of sickness are called critical days, which cannot be known but by the course of the moon.

As for such diseases as do not terminate in a month, viz.: the time the moon traces around the zodiac, which is about 28 days, you may judge of these by the course of the sun.

The day is not called critical because it is the seventh day from the decumbiture, as if the virtue lay in the number seven, but because the moon comes to the quartile at the place she was in at the decumbiture. It is no matter whether it be a day sooner or later.

When she comes to the opposition of the place she was in at the day of decumbiture she makes a second crisis, the third when she comes to the second quartile, and the fourth when she comes to the place she was in at the decumbiture, and it is well she can make so many.

Upon a critical day if the moon be well aspected with good planets, it goes well with the sick; if by ill planets it goes ill. But I know you would question in one particular, which is, if the crisis depends upon the motion of the moon and her aspect to the planets, what is the reason if two men be taken sick at one and the same time, that yet the crisis of the one falls out well and not so with the other?

The reason is the virtue working is changed according to the diversity of the virtue receiving, for we all know the sun makes the clay hard and the wax soft; it makes the cloth white and the face black. So, then, if one be a child whose nature is hot and moist, the other a young man and the third an old man, the crisis works differently in them all because their ages are different. The time of the year carries a great stroke in this business; if it be in the spring-time diseases are most obnoxious to a child because his nature is hot and moist. A disease works most violently with a choleric man in summer, with a melancholy man in autumn, with a phlegmatic man, by reason of age or complexion, in winter.

Suppose at the beginning of a disease the moon was in the place of

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Mars, in the geniture, whose nature is hot and dry, if the disease be of heat it mightily aggravates it; not so if it be of cold, and you seldom find two men, that have Mars in one and the same place in their geniture, fall sick together and the disease differ either at the middle or at the end.

If the age of the people, the season of the year, and the disease be the same, would the crisis be the same? Their complexions may be different, the one hot and dry, the other cold and moist; if the disease be hot and dry the effect will not be so violent upon a cold and moist body as it will be upon a hot and dry; the fire will sooner seize upon that which is hot and dry than that which is cold and moist.

Imagine the complexions to be the same upon both parties.

That is impossible; there must be some difference upon complexions; for, though they may be the same in general, yet in particular there must be some difference by reason of their different diet, exercise and climate, unless they are born and brought up under one latitude. Let us imagine them to be all alike, yet divers things may intervene and alter the crisis; their nativities may not agree. For example, if the moon be in the place of Saturn or Mars at the nativity, the disease is dangerous; not so if she be in the place where Jupiter or Venus was in then. Again, Saturn may be lord of the one nativity and not of the other, and then he may hurt the one and not the other whose nativity he is lord of, for the Devil will not hurt his own. Innumerable such things may be added, as that the one may provide for the sickness beforehand and not the other. But then you will say there can be no certainty at all found in the crisis. Astrologers pass judgment two different ways in disease. The first we call universal, and so Saturn rules consumption, Mars fevers, Venus over women, Mercury over scholars, etc.

The second in particular, and the seventh house has dominion over women, the ninth over scholars, etc. Now, no particular can destroy an universal; for example, if Venus be ill-seated in a nativity and the lord of the seventh be seated, we say the nativity shall generally incur evil by women, though some particular good may occur from them; in like manner judge in their case by the general significators of sickness, viz.: Saturn and Mars.

If you can possibly get the nativities, you shall not err, and if the nativities be one and the same the crisis will be one and the same. For example, I know three children born at the same time; at five years of age they all three had convulsions, whereby they were all

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three lame in one leg, at fourteen years of age they all died in one and the same day of the small pox.

If the nativity cannot be gotten, view the urine and erect a celestial scheme upon the sight of it, and if you have the decumbiture, compare it with the celestial scheme at the view of the urine, and you may judge clearly of the crisis.

To proceed in the matter: if the moon be strong when she comes to the quartile or opposition of the place she was in at the decumbiture the sickness recovers if she be aspected to no planet.

If the moon be angular at the decumbiture and in the ascendant, judge of her alone, and make use of no other significator; if she be not so, join the sun with her in your judgment.

It is very dangerous when the moon is eclipsed when she comes to the quartile or opposition of the place she was in at the decumbiture for at that time death usually baffles the physician. If in the beginning of a sickness the moon be in a moveable sign, the sickness soon moves to an end one way or other. Fixed signs prolong sickness and common signs set a stop to the wisest brain in the world.

Also, this is a certain rule, as sure as the sun is up at noon day, that disease of plentitude are very dangerous when a man falls sick upon a full moon; diseases of fasting or emptiness are most dangerous when a man is taken sick upon a new moon. Let me entreat you to give physic for a disease of emptiness when near the full moon, and for disease of fullness when the moon has lost her light.

It is very bad when, in the beginning of a sickness, the moon is in a sign of the nature of the disease offending. If the moon be in conjunction or aspect with any planet and neither of them have latitude, the crisis will be firm; if they differ much in latitude the crisis will be weak. The moon in conjunction with Saturn at the decumbiture shows long sickness, and if Saturn be slow in motion, so much the worse, and bad is the best at all times in such a case. If Saturn be retrograde when he comes to the opposition of the sun, beware of a relapse. If Saturn have north latitude, be sure the sick is bound much in body. If the moon be joined to a retrograde planet, the sick vomits up his physic. Venus helps more in the sickness of young men and women than she does in old.

If the disease comes of heat, Venus helps more than Jupiter; if the disease comes of cold, Jupiter helps more than Venus; if the disease comes of love, there is not a more pestilent planet in the heavens than Venus: then call for help of Jupiter. In persecution of religion Jupiter

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is little better than the devil: call help of Venus in such a case. Mercury, accidental and strong, signifies good in disease. If Mars cause the disease, Venus helps more than Jupiter; if Saturn, then Jupiter more than Venus. If, in the beginning of a sickness, the moon be in conjunction with any fixed stars of the first magnitude whose latitude from the elliptic is but small, you may fairly judge of disease by the nature of that star she is joined to. Suppose he be of the nature of a planet good or bad, take him according to his nature. When the moon is joined to any planet by body or aspect in the beginning of any sickness, if she aspect that planet when she comes to the quartile, or opposition of the place, the crisis will be firm and stable and it will move no faster, and it will not be altered, be it good or bad. But if, when it comes to the quartile or opposition, she meet with another planet, be sure the disease changes either to better or worse, according to the nature of the star she meets with. And this will appear in the sick party, or else in the physician, or in the course of physic.

Crisis, according to Galen, is a swift and sudden change of any disease, whereby the sick is either brought to recover or death. For every swift and sudden change, wherever it happens, whether in the moon or the air, or sick body, Galen calls a crisis, and from this crisis is judgment given, whether the sick be likely to live or die. The word crisis is derived from the Greek, and signifies to judge or discern or pass sentence upon a thing; therefore critical days are nothing else but days wherein a man may discern a disease or give judgment upon it, be it good or bad, it matters not much. It is taken by a metaphor from the judicial court to the art of physic, because it is something like to plead a man's cause for his life, to labor acutely under a disease to be drawn by inimical accusers before the judgment seat, and to run the hazard of life with a cruel and hostile disease. Moreover, there are three things requisite to a judicial court: the accuser, the person accused and the judge. So likewise are there three things by which the art of physic consists, and by which every cure is perfected. First, the disease; second, nature and the physician, which is nature's servant, or at least should be so; and third, the accidents which manifest what the disease is and stand as witnesses.

The cause of the crisis is twofold, inward and outward; the internal cause is taken from its own proper principle, and Hippocrates says that in double or twofold, for either nature labors to expel the humor that causes the disease, or else the humor itself, being drawn to a place and not fit for excretion by its own weight or quality, burdens nature

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and so breaks out. And the second internal cause may be ascribed to nature itself. Nature, if she be strong is a good physician for all diseases, and concocts the humor which causes the disease, and separates that which is good from that which is bad, and, having done so, prepares that which breeds annoyances for excretion and at last casts it out.

The external cause of the crisis is caused by an alteration of the air, whence arises an alteration of the breath a man draws in, from cold to heat, from dry to moist, or the contrary to them both. Hippocrates, in his treatise of human nature, says that heat and moisture in the body move forward the crisis, for some diseases, says he, come by ill diet, others by the air we draw in; so, then, the diet, as it breeds such and such humors in the body, is internal, but the air we draw in is the external cause of the crisis. Galen says: "The Lord eternal in the beginning, when he formed the creation, made it of a composition of contraries; discord makes a harmony, as in music. If the world be composed of a composition of contraries, various must be the disposition of man's life; hence comes sometimes health, sometimes sickness, sometimes melancholy, sometimes joy to the body of man, and happy is that man that knows himself."

These qualities in man being altered by the various influences of the stars, the sphere of one carrying a swifter motion than the sphere of the other, then various must needs be the disposition of man's body.

The luminaries carry the greatest strength in the heavens, and so do the time-servers in the state; and this cannot be doubted if you consider that the sound of a drum or trumpet incites a man to valor, and the sound of a fiddle to dancing, besides other manifest effects of the luminaries appear to our eyes. Who makes the hours and days and seasons in the year? Is it not the Sun? And does not it make alterations in the air, in plants, and in living creatures? What is the reason that oysters are fuller at the full moon than at the new? Also the marrow in the body of man; is it not the moon? Now, then, we have brought the matter to this purpose, that the universal cause of the crisis is in the influence of the heavens; for the celestial bodies either by heat, light, motion or aspect, configuration, or all of them or some of them, act not only in the four elements, but elementary bodies. For if they act in the one they must needs in the other, and then by consequence in man, which is but compounded of elements.

If the bodies of men are elementary, composed of fire, air, earth and water, we must needs participate in one measure or other of all these

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elements. The elements being contraries, cannot always agree; hence comes the cause of health, sometimes of sickness, and sometimes of death itself.

Hippocrates says the kinds of crisis are two, one in acute diseases, and they are to be judged by the moon; the other in long and lasting or chronic diseases, which are to be judged by the sun. For those crises which come from their proper principle are from the internal cause, depending only upon the motions of the moon and the configurations and aspects to the place she was in at the decumbiture.

Diseases are acute and chronic. Those which are simple acute are finished in 8 to 21 days, and they are called monthly diseases by some and lunary by others. They are terminated in the time the moon traces the 12 celestial signs of the zodiac.

Those acute diseases which suffer change or degenerate are to be judged of by an imperfect way; for sometimes they increase, sometimes they are remitted. They are as fickle as a weathercock, according as the moon meets with the beams either of good or evil planets. For sometimes they change out of acute diseases into chronic diseases, and so a continued fever may change into an hectic fever; and these diseases terminate in 40 days, either good or bad. Very acute diseases terminate in from 5 to 8 days, among which is inflammation of the lungs; exceeding acute diseases end in three or four days, at farthest, as pestilences, apoplexies, etc.

Chronic diseases follow the motion of the sun, and it is about ninety days before the first crisis appears; for in that time the sun comes to the proper quartile of the place he was in at the decumbiture, as appears in hectic fevers and diseases. But when he comes to his sextile or time aspect of the place he was in at the decumbiture, some motion appears whereby a man may judge of the crisis to come.

It falls out well if the sun be well aspected to good planets, and worse if to evil planets; and this holds true if you consider it from the nativity throughout all the whole course of a man's life. For diseases are particular attendants upon a man's life.

Moreover, of the crises some are perfect and some are imperfect.

A perfect crisis is when the disease appears entirely and perfectly to be judged of, and this is sometimes hopeful, sometimes desperate—hopeful when there is great probability of health and recovery, desperate when there is palpable signs of death.

An imperfect crisis is when the disease is changed upon a very light

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occasion; and if Mars be author of the disease and in a sign of a double body, you cannot fail, for the crisis happens as true as the weather.

Your safest way then to judge of the disease is by the aspects of the moon to the planets. When the moon meets with the inimical or hostile beams of Saturn or Mars, have a care of your patient, and if you know what hinders, by the same reason you may know what helps. Physicians in former times distinguished the crisis of diseases thus: Some are safe, some doubtful, some fit to be judged, and some not fit to be judged.

That crisis is safe which comes *without* great and pernicious aspects. It is doubtful, I had almost said dangerous, which comes *with* great and pernicious aspects.

The disease is fit to be judged when signs of concoction come the fourth day; then certainly the crisis will appear the ninth. The moon moves not upon an equal motion; therefore you had best trust her motion rather than the days. The sun has dominion in chronic diseases—the moon in acute; and if you be a wise man your judgment shall be as sure as the sun, and that never fails without a miracle. What I have spoken I have only spoken to show that it is the motion of sun and moon that produces the crisis in diseases, and not the number of days.

Of days some are called by their own name, critical days, others are called judicial days, and they are so called because upon them nature and reason make manifest what the disease is, and experience tells me it is true.

Another time is called intercidental, which fall out between the judicial days and critical. Upon these intercidental days the disease is usually remitted. If so, then a good crisis may be expected; if not, an evil. I shall explain these terms before I go further. A man fall sick, then in the first crisis, let the cause of the disease be what it will, when the moon comes to the same degree of the next sign she was at in the decumbiture, there is the judicial day; for in that time the disease shows itself in its colors. When the moon comes to her sextile it brings the intercidental day, and should mitigate the disease; if she do not, she is aspected to evil planets, and if she be aspected to evil planets an ill crisis may be expected, and so the contrary, and you will never find this fail.

How much improvement has been made in judging of disease since that time.

R. T. JOHNSON, M. D.

West Concord.

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ACUTE PERITONITIS.

By S. T. Brooks, M. D., of St. Johnsbury, Vt.

The year 1851 will always be a memorable one in my recollection. It was then that I entered upon the practice of my profession, and among the first grave cases encountered were two of the then so-called puerperal fever, really puerperal peritonitis. No disease at that day was so formidable, and mine shared the common result and terminated fatally. It was only a few weeks subsequent that I learned of the new treatment, especially then, of puerperal peritonitis, by Prof. Alonzo Clark, of New York, the treatment by opium in heroic doses. It is a fact of interest that he was led to the trial of it in puerperal peritonitis from the marked success following this treatment in simple acute peritonitis several years prior.

I need not remind you that the experience of Prof. Clark has been the experience of the profession generally. And though acute peritonitis in all its forms is still a grave disease, we can now encounter it with hope and courage. Another fact which gives fresh interest to my subject is the real advance made within a few years in the successful treatment of abdominal diseases, involving the hitherto much-dreaded peritoneum and necessitating its section. Exploratory incisions and operations for the removal of tumors are almost of daily occurrence. Recovery from the operation of ovariotomy is the almost universal rule. And now Dr. Wylie of New York reports 116 cases of laparotomy within a short period with only 8 fatal results, there being in 1886 only one death in 55 cases, and of the last 27 cases no fatal result.

This wondrous success in the surgical treatment of disease, involving the peritoneum, is a reasonable ground of congratulation to our profession, and should stimulate every member to more careful investigation of what medical science can accomplish.

It is not my purpose at present to speak of peritonitis in general, but only of some points relating to the practical treatment of the disease in its acute form, which have impressed themselves upon my attention from year to year, as cases have come under my own observation. A brief report of one of those of recent date I will venture to give as best illustrating what I desire to say.

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My patient was Sumner Merrill, aged 22, tall 5 ft. 11, well developed and muscular, average weight 175, a fine specimen of a stalwart son of Maine, who had never before been seriously ill, and who had from boyhood lived upon a farm. Was called to him Saturday evening, November 6, and found his history and condition as follows:—

For several weeks he had not enjoyed his usual robust health, felt languid, appetite poor and bowels somewhat torpid, with frequent attacks of headache, but during the past week had felt more unwell than usual. Yesterday began to suffer first from pain in the bowels in the right iliac region, which has been increasing in acuteness and extending over the abdomen to the left side; present condition, face greatly flushed, acute pain in the lower abdominal region, from right to left iliac space, increased by slight pressure and motion of the body; recumbent posture most comfortable, with lower limbs extended; slight fullness over right iliac space, thirst, tongue dirty white coat, pulse 80, temperature, 101, respiration normal.

DIAGNOSIS, ACUTE PERITONITIS.

Treatment.—Hot fomentations of mustard-water locally over lower bowels; 40 m. Squibb's Comp. Op. mixture given internally, and repeated in 20 m. doses during the night pro renateo.

Sunday, 8 A. M., Nov. 7.—Restless night; no quiet or can't sleep; pain acute and increased tenderness, extending upward to a line with the navel; moderate tympanites over whole abdominal region, as far as line mentioned; face expressive of anxiety, much flushed, and indicative of severe suffering; mind somewhat confused; pulse 95, less volume, temperature 101½; urine scanty and high colored; otherwise normal; great thirst; vomited twice during the night.

A subcutaneous injection of morphine gr. ¼, atropine gr. $\frac{1}{60}$ was given, followed in 5 minutes by partial relief of pain. The hypodermic was repeated every 4 hours during the day, and some quiet sleep secured; pulse 90, temperature 101½; hypodermic to be continued every 4 hours during the night.

Monday, 8 A. M., Nov. 8.—Tolerably quiet night, with some sleep; when quiet no acute pain, but a very moderate movement of the body, and a full inspiration is painful; tenderness on pressure less marked; a distinct tympanitic ridge extends across the abdomen from one iliac region to the other, the upper boundary being on a line with the navel, and from 3 to 4 inches broad; distension below this to the pubis mod-

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erate; partial dullness in the supra-pubic region for about 3 inches above tympanitic; pulse 85, temperature 101; thirst continues; relieved only by ice taken every few minutes; face still flushed, but less anxious; no return of vomiting or nausea. Continue same treatment.

Tuesday, 8 A. M., Nov. 9.—Comparatively quiet night, with intervals of sleep of an hour's duration; pulse 83, temperature 100: tongue less dry; tympanitic distension unchanged; dullness over pubis increased, and varying with change of position.

Wednesday, Nov. 10.—Pulse 89, temperature 99; increased tolerance of pressure over abdomen, and greater ability to change position of the body; less thirst, and gradual disappearance of brown coating of tongue. There being some indication of an involuntary movement of the bowels, there having been no action for 5 days, an 8 oz. enema of hot soap water was administered, which was immediately followed by a moderate discharge of thin, brown fæcal matter. In less than 15 minutes there was a paroxysm of severe pain, which became continuous until relieved by an extra hypodermic. On Friday, the 12th, I was able to report positive convalescence; pulse 80, temperature normal; tongue clearing and moist; increased tolerance of pressure over abdomen, but tympanitic distension continues without appreciable diminution, and supra-pubic dullness unchanged. Hypodermics have been diminished, gr. $\frac{1}{8}$ 3 times a day, in amount and frequency for the past 3 days. Allowance of beef juice and milk increased, and quinine gr. 1 every 6 hours.

Report passed over to Wednesday, Nov. 17, A. M.—Patient continued steadily to improve daily; pulse 60, temperature normal; tympanitis diminishing; can now lie upon either side, and bear considerable pressure upon bowels without discomfort; was called in the evening to my patient, who complained of no recurrence of the abdominal pain, but great distress in the epigastric region; face again flushed; pulse quickened 90, and temperature 101; return of thirst and coated tongue. There were unmistakable signs of acute peritonitis, caused, as I afterward learned, from taking into the stomach a small portion of beef which he was allowed to chew. The diet was again restricted to hot milk diluted one half, to which was added every two hours lactopeptine and bismuth; locally hot mustard fomentations to the epigastrium.

Nov. 18.—Pulse and temperature same as last report; tongue dry in median line and covered with brownish coat; nausea, but no vomiting; constant pain in left epigastrium; good deal of restlessness, with thirst. Continued treatment with hypodermic $\frac{1}{8}$ gr. m. morning and evening.

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Nov. 19.—Tongue cleaner, but intensely red; pulse 80, less volume; temperature 100; countenance anxious. Ordered again beef juice and milk alternately every 2 hours; lactopeptine and bismuth with milk, also quinine resumed, gr. 1, every 4 hours; hypodermic at bed-time.

Nov. 20.—Tongue entirely clean, but having the raw-beef appearance, with here and there isolated patches of aphthous exudation. This gradually extended during the next 24 hours, covering the entire mucous lining of the mouth and fauces; indications of mal nutrition and gropeneral stration were marked; small, weak, and quickened pulse, countenance again being haggard and anxious. The unfavorable result from injections in rectum in the earlier history of the case forbade an attempt to nourish by that means, and notwithstanding the recent gastric inflammation the quantity of quinine was increased to 2 gr. every 4 hours, alternating with wine of coca. Beef juice and milk liberally every 2 hours.

Nov. 22.—Patient more comfortable; circulation improved; pulse only 80 and firmer; aphthous coat disappearing.

Nov. 24.—Tongue *entirely* free from the aphthous exudation and moist. An enema of soap water to-day was followed by a moderate evacuation without pain. It is worthy of notice that during this superadded attack of gastritis there was no return of the peritoneal irritation. On the contrary the tympanitic distension has gradually subsided; the supra-pubic dullness disappeared; quite firm pressure upon the bowels tolerated and position of body changed without discomfort. Convalescence proceeded steadily until I found my patient, December 1st, partially clad, sitting up, and eagerly calling for increased rations. His pulse, in a sitting posture, was 56, and some days later I found his normal pulse to be 52, thus accounting for the apparent disproportion between the pulse rate, never going above 95, and temperature.

The first important lesson in the treatment of acute peritonitis, as illustrated by this case, is the necessity of absolute rest of the bowels, only to be accomplished by the complete arrest of all peristaltic action. From the date of the inauguration of the opium treatment by Prof. Clark in 1851 to the present time, the experience of every observing practitioner confirms the wisdom of that treatment; and yet too often, as soon as convalescence is partially established, through the importunity of friends or perhaps of the patient, the too early use of even a mild cathartic reproduces the disease, and a fatal result follows. Even when this disease is associated with impaction of the bowels, our efforts to

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remove the impacted fæces should be very early and of the simplest character, such as large enemata of hot water.

From this and other cases of acute peritonitis which have come under my own observation, I am confident that the hypodermic mode of administering opium possesses advantages far superior to any other. The nausea and vomiting so often a troublesome symptom in the disease, precludes the possibility of giving it by the mouth, or of its being retained by the stomach. When thus tolerated, a much larger quantity is required to produce the same result. In one of Prof. Clark's earlier cases the patient took in the first 24 hours, of opium and morphine a quantity equivalent to 106 grains of opium, and in the second 24 hours 472 grains. Unquestionably had a little of this been given subcutaneously, a more rapid and permanent anodyne result would have been secured. I desire also to commend the use of atropine with morphine, $\frac{1}{80}$ to $\frac{1}{60}$ gr. of the former with $\frac{1}{3}$ to $\frac{1}{4}$ gr. of latter, and I am confident that you will find the amount of morphine required to produce a given result diminished, and the anodyne action of the atropine superadded.

Again, we cannot too strongly emphasize the most careful attention to diet, not only limiting it to a liquid though nutrient form, during the active stage, but also for several days after convalescence has been assured. In the present case, five days after all indications of active disease had disappeared, less than two drachms of rare, tender beef was the exciting cause of so serious an attack of gastritis as to threaten to exhaust the vitality of the system already so reduced by the original disease. Most fortunately this error of diet was limited in its action to the mucous surfaces, and there was no recurrence of the peritoneal inflammation.

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REPORT OF CASE BY H. A. CRANDALL, M. D.

CAPT. J. N. MARINER, DIED APRIL 10th, 1877, AGED 85 YEARS.

DISEASE — ICTERUS.

Sickness began August, 1876. During the following months of autumn and winter he was able to engage in riding, walking and light labor about his house.

His appetite was greedy, having a strong desire for the richest kind of foods, and in large quantities; then his morbid hunger was not satisfied. At times, between his meals, he would clandestinely lunch upon unripe fruits, crude vegetables, and fancied sweetmeats. Such large quantities of food must have impaired the digestive functions of the stomach.

In the treatment a regular diet was prescribed, but his appetite could not be appeased, but continued with remarkable greediness till within two weeks of his death.

During his sickness he had only one emesis. He received treatment from both schools, viz: the Regular and Homœpathic.

My first visit was made the 8th day of February, 1877. Found the patient able to be about the house, and suffering from an intolerable itching of the skin, his eyes, skin and cellular tissue having the icterical hue of jaundice patients; a brown coating through the center of the tongue and its maximum papillæ enlarged. Breath foul, pulse 72, soft and regular. Urine scanty, high colored, acid and turbid, with bile pigment. Bowels constipated, with pale-colored fæces.

His rest at night was attended with wakefulness and intensified itching, caused by the accumulative heat from the body whilst in bed. He would oftentimes arise from his bed, and severely scratch himself with a flesh-brush. Tenderness in the right hypochondriac and epigastric regions, but he did not experience any acute pain during his sickness.

The treatment, to narrate briefly, consisted of aperients, diuretics, anodynes to produce rest, tonics to give strength, and epigastrics to relieve the tenderness above alluded to. A generous diet to be given, unirritating and taken with care and regularity; also, salt-water and alkaline baths, to modify the cutaneous itching.

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Temporarily the treatment seemed to promise a favorable result. The itching ceased, the tenderness was lessened, the urine less turbid and more copious, the bowels less constipated, and the fæces of a darker hue; the color of the skin and eyes was at times somewhat faded. But about three weeks previous to his death, on a cold, wet day in March, going out of doors, he got his clothes wet, getting a "cold," causing pharyngitis, and for several days following he had chills and rigors, resembling dumb ague. From the day of his "catching cold" he gradually failed, the physical functions becoming more impaired: micturition entirely ceased for the last three days of his life, and all attempts and entreaties for catherism were stoutly resisted by the patient.

THE AUTOPSY.

Many of the Burlington physicians present. Frame of body medium size, physique well developed. The skin, connective and adipose tissue deeply colored with the bile pigment. Abdomen first examined; nearly 45 inches in circumference; protuberent. Incision made from the epigastrium to the hypogastrium. Liver enlarged, of a mud color, and firm fiber. The ductus choledicus was much distended. The cystic duct was contracted, and partially strictured. The gall-bladder was distended with a thin, watery bile containing eighty gall-stones. At the opening of the common duct into the duodenum there was some hypertrophy of the tissues. Not any organic lesion in the kidney, slight ascites, the serous fluid colored with bile. Urinary bladder greatly distended. Circumscribed peritonitis in the left hypochondriac region. Greater omentum adhered to the parietal peritoneum, forming an abscess containing ichorous pus. Spleen enlarged, effusion into the left pleural cavity. The left lung somewhat compressed and the lower lobe containing bloody serum. Arch of the aorta considerably dilated. Slight osseous deposit on the valves of the left ventricle, and around the opening of the right coronary artery.

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FRACTURE OF RIB, CAUSED BY MUSCULAR ACTION WHILE VOMITING.

By D. C. Hawley.

Mrs. G. H. B., age 31, American, was taken sick on December 28, 1886, at which time I was called to see her.

I found her suffering with chills, fever and vomiting.

At the time of my visit the next day she had a violent attack of vomiting, during which she felt a severe stitch, as she called it, in her right side, which caused her to scream out in pain. She declared that something had given way in her side.

When this occurred she had raised up in the bed and was resting upon her left elbow, while the nurse held her head.

I am therefore certain that she was subjected to no extreme violence, as in falling across the edge of the bed, or in any other way.

She informed me, that after I left the house, the pain continued and she wanted the nurse to support her side with the hand continuously, as it gave her much relief. She suffered a good deal that day and night, but did not send for me, as she ought to have done.

When I visited her next day she immediately informed me again that she knew something had broken in her side.

She could move in bed with difficulty and suffered much pain when she tried to turn from one side to the other.

Respiration was rapid and shallow. Upon examination I found a transverse fracture of the ninth rib just outside of its articulation with the costal cartilage.

The diagnostic signs of fracture, viz: mobility, crepitus (on ansuculation), and deformity were present.

The external fragment was plainly prominent, and overriding the internal fragment.

I applied strips of adhesive plaster to the chest in circular layers from below upward, each strip reaching the median line of the body, both before and behind. This placed the part at rest and gave the patient relief.

The adhesive plaster splint was reapplied from time to time as was necessary.

At the end of six weeks the dressing was removed and the patient suffered no more pain or inconvenience.

Union was perfect, with a slight deformity.

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PRESIDENT'S ADDRESS.

Gentlemen of the Vermont State Medical Society:—

Again our annual gathering returns, affording us, as members of this Society, another golden opportunity for friendly salutations, professional discussion, and wise counsel. Alas! that these joyful greetings are so sadly marred on this, the 74th anniversary, by the consciousness of sad losses in our membership. Most assuredly, as with bowed head and sorrowing heart, I mention the honored names of Allen, Fassett and Putnam, I express the heartfelt grief of every surviving member. Surely the old adage is true, and death has taken from our ranks a trio of noble men, whose wise counsels and loyal fidelity to the honor of the profession in general, and the interests of this society in particular, we have so long admired, and the loss of which we so deeply deplore. It is becoming for us to inquire how we who survive them a few brief years, may best honor their sacred memory. In no way so fittingly, it seems to me, as by imitating the virtues which so adorned their lives. This lesson comes with great force to the entire membership, but it seems to me pre-eminently to address itself to the junior members, now in the fresh vigor and activity of their professional life. It is ominous of good that so many of the younger men of our profession are allying themselves with this society, and by their presence and participation in its work, are manifesting an interest in its welfare. We Seniors welcome you, and by our living example and hearty co-operation would enforce the appeals to the faithful discharge of duty owed to our honorable calling, so well illustrated by the worthy members whose decease we so sincerely mourn.

After years of unsuccessful effort, it is a matter of congratulation that the State of Vermont has at length a Board of Health. This organization cannot fail to accomplish much in the matter of improved sanitary laws and regulations, and contribute to enlarged and accurate knowledge of the diseases of the State; which being better known, will be more skilfully treated, and, what is better still, more easily avoided. *Preventive* medicine is assuredly rapidly becoming a most important department of the physician's work. Indeed, it is not too much to say that we are speedily nearing the period, if we have not already attained it, when humanity will be more largely indebted to our profession for the prevention of disease than its cure. It is, however, to be remembered always, that in order that this or any organization may accom-

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plish its purpose, it must have the hearty co-operation and aid of the profession generally. Hence the appeal made to you by the Board, through circulars asking for such information and facts as shall give the topographical peculiarities of each town and its medical history. As a natural and necessary result of this co-operation with the Central Board there must in due time exist local organizations in all our larger incorporated villages. In the mean time it is important that our municipal authorities be brought in direct communication with the Central Board, whose duty it is under section 3 of the law, "to make sanitary investigations and inquiries respecting causes of disease, especially epidemics, and the means of prevention; the sources of mortality, and the effects of localities, employments, habits and circumstances of life, on the public health. They shall also, when requested, or when in their opinion th sanitary interests of localities require it, advise with municipal officers with regard to the location, drainage, water supply, heating and ventilation of public buildings, and the drainage and sewerage of towns and cities; shall respond to the invitations of Boards of Selectmen of the several towns, or the Mayor of a city in case of epidemics, contagious disease or other unusual sickness, by visiting the locality, or in such other way as may be deemed best. The Board is also invested with full authority to promulgate and enforce their regulations for the preservation of the public health, and any person or municipality, after due notice, who shall neglect or refuse to comply with such regulations shall, upon conviction, be fined not less than twenty-five nor more than one hundred dollars."

This act has been in force about one year, and it will be interesting to hear the report of the Secretary as to how many of the Boards of Selectmen in the State have sought advice or aid from the organization. Presumably, of the 243 Boards of Selectmen in the State quite a number have yet to *know even* of the *existence* of the organization; a still larger number who have not examined the act, and therefore know nothing of its requirements or objects; while a still larger proportion have given so little consideration to the matter that it is practically a dead letter, and you will find, I fear, in close proximity to their own places of residence, perhaps on their own premises, wells polluted by surface water, cellars reeking with filth, and an almost entire absence of any sewerage or drainage of any *practical* value. St. Johnsbury is a model village in many respects, and its sanitary condition much above the average, so that within the past six or eight years there has been an almost entire freedom from epidemic disease; sickness has diminished at least 30 per cent., and the death rate 40 per cent.,

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(number of medical men increased 100 per cent.,) and yet within a stone's-throw of my own residence there are a half dozen cellars in which water stands during some portion of the year, and as many houses whose drains have no connection with the main sewer. Go where you will into the farming districts, and you will find the most lamentable ignorance as to the necessity of sewerage and protection of the water supply from surface drainage. Eventually in our own, as in other States where the law has been in force for a considerable period, all our larger towns and villages will have organized local Boards, and through their agency, aided by the Central Board, some form of modified organization will be effected among all the outlying agricultural districts, until the beneficent results of the law shall be extended throughout the entire State. But in the meantime, there is a very important and extensive work to be done preparatory to the accomplishment of these results. Public sentiment must be enlightened as to the urgent necessity of obedience to the laws of health, and the people made to understand that a large percentage of the sickness, suffering and mortality prevalent in the community is due solely to the violation of sanitary laws; and the common people will hear us gladly No class in the community will be so open to conviction as to the reasonableness of the observance of sanitary laws as that which constitutes the great majority—the agriculturists. They have only to apply the same reasoning to the laws of their own physical being, as they are daily using with reference to the products of the soil. What sort of success ought to be expected by a nurseryman who is denied all opportunity to prune his trees till they are already misshapen and deformed beyond remedy; who has no means or opportunity of destroying the infesting parasite, until the vital powers are well-nigh exhausted; no supply of water till the foliage is withered; no fertilizing of the soil till there is complete impoverishment? And is not this about the precise relation doctors sustain oftimes to the bodies of their patients under the present system? *Cobbling* and *tinkering* is pretty much all we are permitted to do for the vital mechanisms of our patrons. The distinguished English sanitarian, Chadwick, says: "I will build a city which shall have any required death rate, from 3 per thousand upward" (the present average being 18 per thousand); and our own immortal Holmes says "the white plague" of the north, as he aptly calls consumption, which is responsible for the lion's share of our death rate, is more than analagous to the familiar spindling of plants deprived of air and sunlight. That distinguished layman, Lord Palmerston, years since declared that for every death from typhoid fever

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some one ought to hang, and that an unfailing specific for malaria, diphtheria and cholera was contained in a 6-inch drain-tile. Add to these the indisputable fact that nearly *one-half* of our existing diseases are *preventable*, and who shall deny that the present relation of medical men to the public does not require readjustment?

The very practical and important question now comes: Who shall bring about the needed readjustment, and who shall be the educators of the community in this important work? I answer, our own medical profession; the very men who are the daily witnesses of the dire evils of the violated physical laws; men whose education, whose character for benevolent and humane work, whose constant observation and experience, and whose position in society pre-eminently fit them for this noble and self-sacrificing work. I know that just here it will be alleged that this work of preventing disease strikes at the very foundation of our means of support. It must be admitted that the allegation is true so far as the present avocation of the physician is restricted within the narrow limit of alleviation of human suffering and the so-called *cure* of disease. But it needs no prophetic vision to see the radical change already begun, which will enlarge its circle of power and influence in the legitimate service which our profession is to render the human race; and just as surely as there is to be a revolution in the character of the service, so will there be in the compensation rendered for that service. The present system of making a physician's income from a family or community depend solely upon the amount of sickness occurring in it, is not worthy of the reforms and advancing civilization of the 19th century. Its philosophy, which, condensed is, *millions* for *cure* but not a *dime* for *prevention*, is radically false. The much abused John Chinaman, who, it is said, was discussing and practicing civil service reform long before our ancestors were building their rude huts, was wiser in his generation when he adopted the motto "an ounce of prevention etc." and remunerated his medical attendants only so long as he was kept in good health, but promptly discontinued their services when sick. This system, which may very aptly be called a scheme of *health insurance*, is rapidly growing in favor, both in the profession and in communities. Not a few of the profession in England, France, Germany, and to some extent already in our own enlightened country, are paid a stipulated annual salary, in consideration of which the family physician agrees on his part to render all professional service required, excepting operations and manipulations requiring the skill and training of specialists; to make careful sanitary inspection of the house and premises of

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his client, and whenever in his judgment it is deemed necessary in order to satisfy him that all is in accord with sanitary laws; to offer any suggestions needed in regard to diet or habits of life;—in short, the family physician becomes responsible as the adviser of the family in all matters pertaining to hygiene and medical treatment. The practicability of this system is assured from the fact, already stated, of its successful adoption in our own and foreign countries, and also the favorable results where it has been tried in various lodges and benevolent associations, manufactories and mines, all over our own country. The advantages of such a system of preventive treatment, both to the medical profession and the public, are manifold, and time will only admit of a brief summary. At least 40 per cent. of disease which is preventable would be avoided.

Acute disease would come under observation and treatment earlier, and the attack be greatly modified, our patients not delaying to have medical advice until, as at present, every conceivable remedy which *household experience, patent quackery, or superstition* can suggest, had been tried, under the false impression that "they are not ill enough to call a doctor." In truth, this phrase has almost become the popular synonym for at least a serious indisposition, and "alas, too often a full, doubtful stage of a possibly fatal disease." *Chronic* diseases would be much less frequent. Under the present system there is a temptation to shorten the medical attendance, sometimes because the physician desires to guard himself against any suspicion of prolonging his visits with a view of making all out of the case pecuniarily that is possible, and oftener perhaps because the patient considers himself so far convalescent as to dispense safely with further medical supervision. The consequence is a large number of serious and obstinate chronic ailments, the sequence of a half-removed result of some acute attack and "germs of evil which will curse generations yet unborn, are left lurking in the system."

Welcome then, we say, to the day when the prevention of disease shall be the chief avocation of our profession, and that this period may be hastened, let every member exert himself to the utmost, for the faithful enforcement of the wise and beneficent laws affecting the sanitary condition of our country. Give circulars from the Secretary of the Board a careful, *thoughtful* reply; co-operate heartily with those whose official duties require them to devote themselves to this important work; educate the community in which Providence has placed you, to obedience of the laws which govern their physical being, and if perchance you are not rewarded pecuniarily, the consciousness of noble work ac-

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complished for the benefit of humanity will be a greater and more enduring compensation.

The question of expert testimony in our Courts is gradually occupying a more prominent place in the minds of medical men, authors of medical jurisprudence, and the legal profession. During the past two years, so far as I can learn, there have been no new decisions by Supreme Courts with reference to the right of expert witnesses to extra compensation or their duty to answer the summons as expert witnesses without promise of reasonable compensation. It will be remembered that all the decisions in our own country up to 1884, with *one* exception, that of *exparte Dement*, in the State of Alabama, were favorable to the claim of the expert witness to extra or reasonable compensation. In States where this matter is not regulated by law, an increasingly large number of cases is being reported in the inferior county and district Courts, where an attempt has been made to reduce the medical expert witness to the level of the ordinary witness, whose testimony has reference only to simple facts. One of the most recent and interesting of these was that of Dr. F. H. Darby, a prominent physician of Warren, Ohio. In a case of manslaughter, having answered all questions of fact as to post-mortem conditions, etc., he was asked his opinion as to what the appearance of the external wound indicated? Refusing to answer unless he was guaranteed a certain fee, he was sent to jail for contempt, and, having been confined behind the bars several days, was fined $25 and costs. The reply of Dr. Darby when asked to give his reason for refusing an answer, was so clear and logical that I give it in his own words, to which all lovers of justice will say Amen. "Because," said he, "it is expert testimony, and to render such requires a very liberal expenditure of time, labor, and capital to acquire the knowledge necessary to give it. This knowledge is the physician's stock-in-trade; it is what he has to sell. For the State or any one else to extort this from him without reasonable compensation, is unjust, and in direct violation of every principle of law and equity. The duties of common witnesses, physicians, like the good citizens that they are, have ever been willing to assume. To matters of fact we are willing to testify at any sacrifice. We feel that we owe it to the State, that the ends of justice may be meted out to evil-doers; just as a juryman in civil life makes a sacrifice of time, or the soldier in times of war must take up arms in defence of his country, so, too, we feel under a like obligation to abandon our respective fields of labor, and, if need be, spend day after day in courts to elucidate any facts that may have come under our own observation. But here we draw the line,

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and I for one take the position, that questions of opinion, the correct answers to which depend on previous and special education, professional knowledge and skill, is our private property, and instead of the State being a party to our robbery, it should extend to us the strong arm of protection, as it does to other property owners." The Doctor was very warmly sustained in his position, and received numerous resolutions from medical societies and leading physicians throughout the State, expressive of sympathy, and material aid to appeal from the decision of the Lower to the Supreme Court of the State. This appeal has been made, and the Doctor writes:—"We are now at the door of the Supreme Court. It will take us three years, however, to get a hearing, *i. e.* unless taken up out of its regular order; a thing unlikely, unless the doctors go on a strike, and create a dearth of experts."

Recently, also, Judge C. C. Fuller, of Mecosta county, Michigan, on an occasion where a physician refused to give expert testimony without extra compensation, decided: "After many years study and observation, I decide that a physician's knowledge is his stock-in-trade, his capital, and we have no more right to take it without extra compensation than we have to take provisions from a grocery without pay, to feed a jury." It is evident, I think, that this just and sensible view of the question of remuneration of the expert is conceded by our highest authorities upon medical jurisprudence, and most eminent jurists; and yet it is equally evident that expert testimony is gradually declining in favor. The conflict of opinion between men of science and distinction in the profession, is so frequent and decided as to bring all expert testimony into unmerited disrepute. Redfield makes this sweeping statement:—"When we consider the conflicting character of testimony coming from experts, and often its one-sided and partisan character, and above all the tendency of the most mature and well-balanced minds, to run into the most incomprehensible theorizing, we cannot wonder that some of the wisest and most prudent men of the age are beginning to feel that the testimony of experts is too often becoming, in practice, but an ingenious device in the hands of unscrupulous men, to stifle justice and vindicate the most high-handed crime." We must admit that there is too much truth in this statement, and no question affecting the dignity and honorable character of the profession demands a more thoughtful inquiry than the remedy for this evil. This, in my opinion, is only to be reached by wise state legislation. Says Dr. John J. Reese in his able work on medical jurisprudence, in commenting on this subject:—"The only true andproper system is for each State to appoint one or more experts who shall be State Officers, phy-

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sicians of thorough education and experience and training in this particular line, who shall devote their time and attention to this duty, and for which they shall receive an adequate compensation." Our own Ordronaux says, "let experts be selected and summoned as true *amici curiæ*, let their examination be restricted to the court solely, and they would then be placed above the reach of any possible assumption of bias toward either party. For this, after all, is the true position of every honorable expert. He is not an ordinary witness, and should have no personal concern with the issue."

When the expert shall be chosen by the Court and regarded not as the paid witness of litigants but as the instructor of judge and jury, and chosen on account of superior skill and knowledge, large experience, accuracy of observation, discreetness of judgment and above all, thorough integrity; then will the ends of justice be saved by expert testimony and command the respect to which it is entitled.

In our own State the act No. 101 relating to the fees of expert witnesses, etc., passed Nov. 29, 1882, is good, providing for extra compensation or fees for expert witnesses in attendance in State causes, in case they shall have been previously selected and their production ordered by a Judge of the Supreme Court to prevent a failure of justice.

Section 3 of same act: Judges of Supreme Court are empowered to order examination of experts within or without the State, said order to be made on petition of State's Attorney, and provision is made for their payment. In Caledonia county this act has never been enforced, and as far as I can learn is also a dead letter in other parts of the State, and there has been failure of justice in my opinion in consequence, as well as unjust imprisonment, to my own personal knowledge. Such a modification of it as shall make it positively obligatory upon the Judge to enforce its wise requirements, is desirable, and I commend this change in the act as worthy of your deliberation and action.

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THERAPEUTICAL MEMORANDA.

By Henry D. Holton, M. D.

In calling your attention to some therapeutical considerations, it is not so much for the purpose of imparting to you some new and original facts in this interesting field, as it is to draw from you in their discussion the wealth of experience which you individually possess, and which will be of great value to us as a society.

Salol or Salicylate of Phenol.—This is a white crystaline powder; it is insoluble in water, but soluble in alcohol, ether and the fatty oils. It has an odor somewhat resembling oil of wintergreen. Its insolubility in water and the gastric juices, and its free solubility when it comes in contact with the pancreatic secretion in the duodenum, are properties which particularly recommend it in all the various forms of rheumatism, for which salicylate of soda has been used with so much success. By the use of this remedy we avoid the gastric irritation which we have so frequently seen following the administration of salicylate soda or salicylic acid in any other form, as well as the buzzing and ringing in the ears and the flashing of light before the eyes. Having used it in quite a variety of cases, I have not observed any of these unpleasant effects. In acute rheumatism, in neuralgia of rheumatic origin, and in chronic rheumatism, it is especially valuable given in powders of ten grains, every four hours. These powders may be given in capsules or in jelly. Its action is equally favorable whether the patient has fever or not. If fever is present, the temperature soon falls and the surface of the body will be found covered with perspiration.

It is very probable that its use in other febrile troubles will prove it to be useful as an anti-febrile. I have not had an opportunity of testing its efficacy in typhoid fever, but the fact that it is not decomposed until it has passed out of the stomach, taken in connection with the fact that it possesses antiseptic properties, and is especially valuable as a germicide, renders it quite probable that it will prove of considerable value in this disease, although salicylic acid has failed to modify in any degree this affection. As its continued use renders the urine of a dark color and having somewhat the odor of carbolic acid, you can readily see that it is a most useful remedy in cystitis, especially when the inflammation has resulted in ulceration of the bladder as evinced by the presence of pus in the urine.

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Another remedy of this class that is having its origin in coal tar, is antipyrin.

Although this was first brought to the notice of the profession for its remarkable power of reducing temperature, it has proved to be of marked value in the pain of rheumatism or gout, and in nervous states characterized by pain. Given in the dose of 15 grains, every four to six hours for three or four days, it will not only relieve the pain in rheumatism, but the swelling will disappear. In facial neuralgia, in migraine and lumbago, this dose repeated in two hours will usually give relief. Antifebrin or acetonilide, still another of this group, was first used to bring down the temperature in all febrile affections. For this purpose it is equally as effective as antipyrin, and less likely to produce serious depression of the heart's action, as I have several times observed after the administration of the latter.

Antifebrin is apparently possessed of greater febrifuge power than antipyrin, kairin or quinine. Its effects are usually produced in an hour, and continue for 10 or 12 hours. When continued for a long time, it becomes necessary to increase the dose. It also seems superior to antipyrin in its sedative effects upon the nervous system. When given as a nervine the dose need not be more than half that used when the febrifuge effect is desired. It is best given in some alcoholic preparation as it is not soluble in water. The aromatic spirits of ammonia will in some cases be a useful vehicle. The fact already mentioned, that even in large doses antifebrin does not depress the heart's action as antipyrin does, makes it a safe remedy in neurosis affecting the heart as augina pectoris, or spasmodic troubles. Both are valuable in all other neuralgias, and especially in that attending locomotor ataxia. It has been recommended in epilepsy, and has proved successful in some cases, but a more extended trial is required before a positive opinion can be expressed with regard to its value in this disease. They will also be of great value in relieving the neuralgic pains attending various uterine affections. One other member of this coal tar group which seems worthy of attention, is tuchsin, derived from aniline. It was claimed, at least ten years ago, that, if administered in doses of one to three grains daily, it would cause albumen to disappear from the urine. Several subsequent observers have substantiated the claim. Recently Dr. L. Reiss reported 20 cases of nephrities of various forms, which differed both in the stage of the disease and the quantity of albumen excreted. The doses given were large; in some as much as 15 grains were given during the day without any disturbance of the digestive organs, or other abnormal phenomena, although the remedy was con-

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tinued for ten days to three weeks, and in one case for six weeks. In twelve of the cases the daily amount of albumen was estimated: only two showed an immediate decrease of the albumen. In one case, after taking the drug for 14 days, the quantity of albumen was nothing. In the other nine cases the average quantity of albumen before this remedy was used was 6.84; during treatment it was 2.98, and after treatment 1.98. Three weeks after ceasing to take the drug the albumen had entirely disappeared.

In this connection I desire to call your attention to a test for albumen, new to me, which is exceedingly simple, and at the same time delicate and accurate. It is presented by Dr. Pavy, of London, Eng., before the International Medical Congress at Washington a few weeks since. It consists of two tablets, each containing two grains, the one of citric acid, the other of ferocyanide of sodium. The method of using these tablets is as follows: Into a small amount of urine in a test-tube, is dropped the tablet of citric acid, which readily dissolves; then the tablet of ferocyanide of sodium is added, and as it dissolves the albumen is thrown down as a white precipitate. Ferocyanide of sodium is used instead of potassium because of its more ready solubility. Dr. Pavy stated that after extended experiments by several chemists, albumen was the only substance which would be thrown down by these agents. Another remedy which promises to be useful in cases where heretofore we have been impotent in our treatment, is jambol in the treatment of diabetes. Syzggium jambolanum is a plant found in India. The seeds are the only portion found to possess any active medicinal power. These are oblong, and somewhat the shape of a kidney bean. These powdered seeds given in the dose of five grains three times per day, diminish the secretion of urine, and arrest the formation of sugar in diabetes. Experiments have been made which show that where 44 per cent. of starch was converted into sugar in 50 minutes, under precisely the same conditions when 15 grains of jambol powder was added, only 19 per cent. was so changed. In the past year several cases have been reported where the daily average of urine voided was six to eight quarts, with a specific gravity of 1,040 or more, and containing eight to ten per cent. of sugar. The quantity of urine diminished. and the sugar disappeared entirely from the urine in ten days after the patient was put on powdered jambol in doses of five grains three times per day. If large doses are given, the action of the heart is very much increased, with suppression of urine. It is supposed that this remedy acts as a stimulant to the vasar motor system, especially centers in the spinal cord, solar mesenteric, and renal

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plexuses, producing a great increase of arterial tension generally, and upon the renal arteries, so increasing the tension in some cases as to almost occlude the capillary vessels.

For the purpose of learning your experience, and for discussion, I wish to inquire what, if any, is the effect of veratrium viride in the treatment of puerperal convulsions? I would say that in three cases, which are the only ones in which I have used it, the results have been extremely satisfactory. I used Norwood's tincture in teaspoonful doses. In one case a second dose, half the quantity, was given in two hours, on account of some involuntary contraction of the large muscles. In one of the remaining cases, for the same reason, a full dose was given in three hours, and in the other only the first dose was taken. In none of these cases did the convulsions return, and all these recovered. These cases, taken in connection with many others reported from different sources in the last few years, lead me to the conclusion that, in connection with other appropriate treatment, this drug will be found of great value in the treatment of this most distressing disease.

VESICO-INTESTINAL FISTULA.

By D. F. Rugg, M. D.

Case of G. A. B., male, age at last birthday 43 years. Had been a hard drinker up to nearly 1887, since which time he has not been able to use liquors of any kind; says they make him sick; only occasionally used liquor during the autumn and winter of 1886. Was called to see him Dec. 23, 1885. Found him suffering from inflammatory rheumatism, which involved nearly all of the joints of the extremities. Have known patient for eleven years, and do not know of his being confined to the bed previous to this time. Rheumatic trouble ran a brief course. During my attendance upon him I learned of other troubles, namely three strictures of the urethra, one at meatus, one one inch below, and the third four inches. Stricture at meatus was so small it was difficult to introduce an ordinary sized silver probe. Patient says he never had gonorrhœa, a statement I am inclined to believe from circumstances connected with his previous history. There was also a slight swelling in the left inguinal and hypogastric region. Patient said he had noticed the tumor for a year previous, and it had been sore and painful.

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The pain and swelling gradually increased. There was also some irritability of the bladder. The strictures of the urethra were dilated so that a No. 9 gum elastic catheter could be passed into the bladder. The bladder was washed with a solution of boracic acid, glycerine and water. The patient gave no history of ever receiving an injury to the abdomen.

During the summer of 1886 an opening formed between the intestine and the bladder. Large quantities of raspberry seeds were voided with the urine, and upon one occasion a good sized lemon seed. Patient was warned not to eat any fruit that contained seeds that he would be likely to swallow. Upon one occasion he ate quite freely of popped corn, and consequently suffered extra pain occasioned by the passage through the bladder of the undigested hulls of the corn. Air and fæculant matter were passed, but not in an even quantity, as there would be more at times than others. Owing to the irritation, the bladder was evacuated about once an hour on an average. Dec. 25, 1886, an opening appeared about two inches above the pubes and about the same distance to the left of the median line, from which fæculant matter continually passed. Patient could not pass his urine in a recumbent position, nor in the presence of any other person save that of his wife. When he attempted to void urine it was usual for the fæces to pass through abdominal wall and rectum, as well as through urethra with the urine. In a short time five other but smaller openings appeared in the hypogastric and left inguinal regions. Six to eight grains of opium or its equivalent were required at times to allay the pain from which he suffered. The discharges did not seem to be affected, however, as there was no constipation. The passages from the different openings were all well digested, excepting the undigestible matter before mentioned. Patient was very low at the time the abdominal openings appeared, and although entertaining hopes of recovery, expressed a desire that when death did occur there might be an examination made. When asked what he would have for nourishment his usual reply was "nutcakes and coffee." The smaller openings gradually healed. The largest one, which was the first to appear, would occasionally close for a day or two, when there would be distension of the abdominal surface around the part and increased pain. Both would decrease upon the re-opening of the fistula.

Patient gradually gained strength, and was able to ride out the first of the summer. When questioned the last of September, 1887, he stated that nothing but urine had passed from the bladder for two months. No fæces had passed through abdominal wall for a month.

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For the past three weeks there had been a constant discharge of pus. He has abdominal pain every morning, which gradually disappears after being around. Is able to do light work, and has been two miles to a neighbor's this fall to husk corn. Has occasionally walked one mile from home and returned on foot. The opium habit is firmly seated. He takes about an ounce of laudanum each day in teaspoonful doses.

BILIARY CALCULI.

By Fred L. Ladue, M. D.

It is with considerable hesitation that I choose the fruitful subject of Biliary Calculi for a theme, knowing full well that I can do nothing by my feeble efforts to throw any new light on this much-discussed subject, advance no novel or untried treatment, nor vaunt a specific from which to become temporarily famous; but as it is a self-evident fact that any meeting of medical men at the present stage of progress in the science would be extremely short in its duration, and its transactions ridiculously brief, which would confine itself to the absolutely new,—and so few men are thoroughly familiar with the old,—that with a proper selection and presentation of what has been before presented, as much permanent good is derived as from a consideration of what has been advanced for the first time; hence I will confine myself to a case in practice, with a brief résumé of the different forms of treatment which have been and now are fashionable, and those which have become standard therapeutic and surgical procedures, together with a few notes gleaned from current literature.

Of all the varieties of stone formation occurring in the human body, whether in the kidneys, urinary or gall bladder, none exhibit more interesting phenomena, nor appear in so many diversified forms, as those having their origin in that diminutive but often troublesome organ, the gall bladder.

Urinary calculi are often insidious in progress of formation, sometimes difficult to diagnose, and frequently dangerous to the continuance of life; yet the difficulties in diagnosis, and particularly in treatment, become insignificant when compared with the frequent difficulty in diagnosing gall stones, (especially when there is no ocular demonstra-

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tion present, which is often the case,) and above all, the often-ventilated question of treatment; not only insignificant when compared with biliary calculi in relation to diagnosis, but infinitely more so when the possibilities and dangers of operative procedure are taken into consideration.

The primary cause, of course, is unhealthy bile. Either there is a hypersecretion of cholesterine or else the alkaline properties of the bile are deficient in quantity, rendering the bile unable to hold the crystaline cholesterine and the salts in solution. The remote causes are held to include a sedentary habit of life, and a diet of rich and highly seasoned foods. The last named cause is such a prolific factor in the development of abdominal disease, that I can not refrain from quoting Sir Henry Thompson:—"I have for some years past, however, been compelled by facts which are constantly before me, to accept the conclusion that more mischief in the form of actual disease, of impaired vigor, and of shortened life, accrues to civilized man, so far as I have observed in this country and throughout Western and Central Europe, from erroneous habits in eating, than from the habitual use of alcoholic drink, considerable as I know that evil to be." Shakespeare remarks:—

"Strange it is
That Nature must compel us to lament
Our most persisted deeds."

No age has been spared the infliction of obstructed bile ducts. From the eighth month of intra-uterine life to the ripe old age of the octogenarian, life has been destroyed by these foreign bodies. Even urinary calculi have been produced before development of the kidneys. Of the sexes the female is more liable, owing to their habits of life, their proneness to constipation, and their barbarous custom of tight lacing.

A description of the different forms of calculi would be nearly endless. Suffice it to say, that the color varies from white to black; the size from a grain of sand to an egg; shape round, square, octagonal and irregular; consistence usually soft, if there are many, hard if single. They are composed of cholesterine, biliary pigment, mucous and salts. The majority of calculi are composed principally of cholesterine, which is a pure pearly white hydrocarbon, lighter than water, and melts partly in boiling alcohol, losing one fifth its weight.

The ancient writers on medicine either failed to note their observations on this disease, or else the trouble was extremely rare in the early centuries. Their existence was doubtless known, and while their works contain much about urinary calculi, and the subject is even included in the famous Hippocratic oath, the biliary calculus is entirely omitted. The

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first written account of the subject was in 1565, when Johann Kentman of Dresden communicated his discovery of them to Conrad Gesner, to be made use of in his great work on Fossils. Vesalius and Fallopius in 1643 examined and described them with great care, so that Fernel and Glisson could, in the first extended account of them, give a complete description. Their chemical analysis followed some years later. Fourcroy in 1785 examined them and called the cholesterine adipocire, from its resemblance to the decomposition of the fatty part of the human body. From that time until the present, cases have occurred in many varieties, and literature has accumulated, until there seems no chance for anything new hereafter. The description of a case in practice, perhaps, will illustrate the disease better than any enumeration of symptoms, although the case in some respects is a rare one.

Mrs. F. G., aged 45, of sedentary habits and addicted to the use of rich and highly seasoned foods, was attacked in August, 1883, with an excruciating pain extending from the nipple to the umbilicus, accompanied with severe and uncontrollable vomiting. This continued at intervals for ten days, being relieved only by morphia hypodermically and the hot bath. On the tenth day she vomited seven concretions, which were regarded by Prof. Geo. W. Davis of the Kansas City Medical College, who was in town at the time, and myself, as biliary calculi. In a few days a large mass of fæces was expelled in which were great numbers of the concretions, the movements resembling the evacuations of one who has partaken largely of choke-cherries without stoning. This colic, nausea and vomiting continued five weeks, during which time there was a week in which a localized peritonitis was present. During these weeks there were daily rectal evacuations of a large number of calculi—so many that to count them was an impossibility. The pain gradually decreased, but the calculi made a regular weekly appearance, always preceded by a short, sharp attack of biliary colic. Again, in April, 1884, she had a very severe attack, lasting at intervals for three weeks. The passage of stones now became comparatively easy, owing doubtless to the permanent dilatation of the cystic and common ducts. Nov. 17, 1884, I was called in the evening, and found her suffering from a slight attack of pain. Before morning she vomited over a hundred concretions by actual count. These were pearly white, differing from all previous ones, which were yellow and brown. They were nearly the size of the first and exhibited facets. Subsequently, as usual, innumerable quantities passed *per anum*. Dec. 19, 1884, a mild attack began at midnight. At 6 A. M. the following day, she vomited one hundred fifty white calculi. These weighed fourteen drachms, averaging six grains each.

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The peculiarities of this case, which makes it an interesting one, I will summarize. Premonitory symptoms, such as headache, nausea, constipation, tenesmus, dyspnœa and palpitation, occurred for two or three days previous to the attack. The vomiting of so many stones, about three hundred and fifty, is the one salient point in the case. That this symptom is rare, we have the authority of Frerichs, who has made a special study of this disease. "In rare cases," he says, "calculi pass from the duodenum up into the stomach and are vomited. The vomited matter contains single, or occasionally several, even as many as twenty concretions. This vomiting is preceded by severe and colicky pains." Thus it seems that vomiting them at all is exceedingly rare when compared with the large number afflicted. In this case the first ones vomited came up after a protracted period of retching; afterward they always came up at the first vomiting spell. Ziemessen says:— "Expulsion by vomiting is very rare. Two cases are cited by J. L. Petit, and eight cases have been collected by Dufresne. Jeaffreson saw one vomited by a woman aged 94. In one case twenty were expelled."

The calculi reach the stomach usually by regurgitation, but very large ones have chosen a fistulous route by the process of ulceration. An immense quantity of slimy, ropy, tenacious mucous accompanied the vomiting, usually about a quart. The rapidity of formation and the comparatively easy expulsion in the later stages is interesting. Without exaggeration I am sure that the total must reach far into the thousands. Dr. Shoemaker, of Philadelphia, counted 1,840 in one bladder, and Otto reports counting 7,802. Some peculiar cases are reported of the strange migration of calculi. They have been found no less than three times in the urinary bladder. Guterbock (Virchow's Archives) found one in the bladder of a female, too large to have been introduced from the outside. Liebreich examined it and found it to be composed of cholesterine and billary pigment, with a crust of uric acid. An autopsy disclosed the abnormality of a cord extending from the gall to the urinary bladder, a part of it being the remains of the fœtal urachus.

The pathological results of the presence of gall stones are easy to foresee. They may pass out and become expelled, leaving the track behind unmolested and little or no permanent damage done; or they may lodge in the ducts, from which ulceration and perforation result; or, a more favorable termination, by accluding the duct remaining *in situ*, closing permanently the gall bladder and doing no further mischief; or by pressure on the walls of the bladder a catarrh is set up, atrophy, ulceration and perforation ensue, resulting sometimes in an

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external fistula through which calculi are discharged. Murchison collected eighty-seven of these cases, some of whom recovered. Again, the ulcerative process sometimes produces an adhesion to the colon, and a permanent communication established between the bladder and intestine.

The diagnosis will always be, as it has ever been, a thing of doubtful certainty, unless the disease is accompanied with the visible products of the disturbance. A great many cases are called gall stones, in which a stone is never seen, despite the fact that persistent sifting of the fæces is resorted to, especially among a large class of doctors who care nothing for the reputation of scientific medicine, so long as they can dupe their confiding patients and fill their pockets. They frequently diagnose an obscure case of pain as gall stones, in order to retain the patient for prolonged treatment. One case came under my observation of a lady who has persistently eaten onions three times a day for thirty years, because a traveling charlatan told her she would die of gall stones, and that was the only solvent known. She never saw a gall stone, and thinks none ever came away. The onion treatment is based on the story that a physician had an elegant penknife inlaid, not with precious stones, but with stones far more precious to the medical heart—gall stones. The knife disappeared, and was found some months later in a pile of decaying onions, the stones entirely dissolved. I can not vouch for the authenticity of this historic legend.

Hepatic colic can be confounded with hepatalgia, enteralgia and gastralgia. These neuralgic affections are excluded by location of pain and appearance of calculi in the stools. A diagnosis has been made by feeling crepitation in the distended gall bladder.

Specifics for the prevention of biliary calculi have had their rise and fall; their time of popularity and their period of disuse. At the present time there is a prevailing skepticism concerning any certain method of prophylaxis. Ever since their discovery physicians and chemists have periodically loomed up with a wonderful solvent of cholesterine, and have claimed great results from their medicine; but like the great search of old for the talismanic "Elixir of Life," these discoveries have had the fallibility of their powers demonstrated; not unlike the alchemists in the practice of their "divine art," who dreamed they had found the fountain of youth, only to wake from their slumbers disappointed. Experience, with her ruthless hand, has swept the majority into oblivion. Only a general course of treatment founded on physiological principles and common sense, has stood the test of time or produced any results.

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The majority of treatments vaunted to cure have been simply empirical, and the various schools of medicine are not much in advance of each other in producing a reliable and effective solvent. A prominent professor in a noted homœopathic school wrote me in relation to this subject:—"We homœopathists simply prescribe for the patient as if he did not know that he had gall stones. The knowledge of the fact cuts no figure in the treatment." They undoubtedly follow the sage advice given by the witty but sensible Josh Billings:—"If i was a doktor and understood my bizziness, i should doktor my pashunts and let the disease take care of itself. More folks are cured in this way than enny other." But perhaps in this disease, as in many others, scientific treatment may gradually be evolved from empiricism, which may have proved the foundation stone for the ultimate building up of a stable and reliable treatment. "All true science," says Huxley, "begins with empiricism; though all true science is such, exactly in so far as it strives to pass out of the empirical stage into that of the deduction of empirical into more general truth."

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Durande, in 1792, began the use of his now well-known remedy, ether and turpentine. Cholesterine readily dissolves in these agents, hence its supposed therapeutic value. It has ever been a mooted question as to its efficacy, some claiming wonders for it, but a large majority condemning it as worse than useless. While Durande ascribed its sole power for good in its ability to dissolve the concretions, others announce its action to be one of increased peristalsis—a *vis a tergo* by which the stone is propelled along the "straight and narrow road" to life intestinal.

Frerichs says:—"The best plan is to avoid the remedy altogether, because its solvent action is worth nothing, and as an anti-spasmodic it is surpassed by morphia." Chloroform has often been used for the same purpose, but the quantity necessary to effect solution is beyond the power of the system to endure. Harley places this estimate upon it in his great work on "Diseases of the Liver." He says:—"On physiological grounds I very much doubt the efficacy of either sulphuric ether or chloroform as solvents of gall stones in the living body. Sulphuric ether and chloroform would, no doubt, dissolve a concretion of cholesterine in the gall bladder, were they admitted into that viscus in a pure state and in sufficient quantity; but we have no proof that such is the case. On the contrary, we know, at least in as far as chloroform is concerned, that no sooner does chloroform become absorbed and mingled with the constituents of the blood than it becomes decomposed, the chlorine combining with the blood, and formic acid being set free."

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Harley has no confidence in solvent remedies other than to fluidize the bile, and in his treatment he gives decided preference to benzoic acid and its salts.

Eichorst puts forth a claim for salicylic acid, by means of which he states to have cured by the use of seven grains, prolonged for some time.

A few years ago an enthusiastic physician proclaimed that the long-sought-for specific for biliary calculi had been found at last in olive oil. All that was necessary was to administer a sufficient quantity at night, and, like the miraculous appearance of manna to the hungry Israelites, the following morning hundreds of calculi would appear to feast the physician's eyes. It was also noticed that, Nature being an exact banker, the returns were in just proportion to the investment; that the number of calculi were in direct correspondence to the amount of oil administered. The bubble burst. A reflecting physician submitted them to a careful analysis, and found them to be concretions of the oil that had been administered. The popularity of this specific suddenly disappeared, but lately authors have resurrected it from oblivion, and it is having at present an exacerbation of esteem.

It is a waste of time to discuss the olive oil treatment further. Suffice it to say, that olive oil has not the slightest power to soften or expel true calculi, but on the contrary is positively injurious, and should be absolutely prohibited, as well as other fats and oils.

Dr. T. H. Buckler, of Baltimore, recommends the hydrated succinate of the peroxide of iron, and Bartholow the phosphate of soda.

Our grandfathers treated these cases very scientifically (?) by means of the lancet and tartar emetic, but their methods have been relegated to obscurity, and are now a thing of the past. Following their methods come the alkaline treatment, a treatment which sprung into existence spontaneously, from the natural reason that it is a true physiological method, and one that has been verified many times. It has often been proved that the bile of biliary calculi is acid, and *per se*, the alkaline treatment is a natural deduction from this condition.

Harley, in recommending the alkaline method, says that the patient can not take too much, as it relieves the irritation, facilitates the vomiting and favors the secretion of liquid bile, a copious flow of which favors the removal of the stone. The acid treatment has proved effective in several hands. The alkaline mineral waters are largely used, the carlsbad and vichy being the most commonly used. The artificial carlsbad salt is also used.

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Cattle are noted for their liability to gall stones when confined in stables, but a cure is effected immediately when turned out to grass; hence Van Swieten's absurd recommendation of grass for the human being.

In a paper of this kind only a brief and incomplete résumé of the surgical treatment of biliary calculi can be entered into.

Cholecystotomy is the term applied to the operation of opening the gall bladder for exploration and removal of diseased products, stitching the viscus to the abdominal wall, and leaving a fistula. The operation was described by Sharp in the early part of the eighteenth century, and puncture with the trocar was done by Petit in 1743. Bartholow, according to Prof. Keen, was the first to aspirate the gall bladder. Phudichum, in 1859, proposed opening the gall bladder and crushing the calculus, and Maunder and Hughlings Jackson also proposed opening in appropriate cases; but it remained for the revered J. Marion Sims to revive the operation and place it on a footing in surgery. Up to 1886 the operation had been performed thirty-five times. Lawson Tait reports a case in which he crushed a stone in the common duct, the patient making a good recovery. In Sims' case, sixty stones were removed, but the patient died on the ninth day. Dr. George Brown (Brit. Med. Journal) reports a recovery after an exploratory incision had been made, which failed to disclose the position of the gall bladder, though subsequent spontaneous discharge of bile occurred.

Langenbuch's operation for the complete removal of the organ, cholecystectomy, had, up to 1885, been performed eight times with $12\frac{1}{2}$ per cent. fatal, while cholecystotomy has a record of 30 per cent. fatal. Cholecystectomy can have but a limited range of applicability, especially if the stone obstructs the ductus communis, as it often does, a preliminary or subsequent lithotrity would become imperative. Sir Spencer Wells operates by removing the contents of the gall bladder, sewing the incision with the continuous suture and returning the organ to its native home. Tait, as is habitual between him and Wells, condemns this operation. In 1882 Dr. Winiwater performed a successful operation for occlusion of the cystic duct and attaching the gall bladder to the colon, thus establishing a permanent communication between the organ and the intestine. This is only taking advantage of one of Nature's ways of doing it, and appears reasonable.

The question of surgical procedure, after it is decided upon, lies between cholecystotomy and cholecystectomy. Some have disputed the idea of any success being attained from a removal of the bladder—in fact claim that a continuance of life is incompatible with its absence.

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These disputants hold an exaggerated idea of the function of the gall bladder, which is merely a receptacle for the surplus hepatic secretion, and consequently occupies a position low down in the scale of physiological importance. Its office is one of convenience and not of necessity, and its closure does not disturb the secretion, elimination, or disposal of the bile. Patients have experienced no inconvenience from a prolonged vicarious determination of bile, the clay stools persisting a long time. Again, the fact that over two-thirds of the cases operated upon for cholecystectomy have recovered, is of itself indisputable. Tait says that none of his patients suffered in any way when all the bile came through the fistula. Sims' and Tait's operations seem to hold out the best inducements at present.

In surgery of the gall bladder there is a broad field for cultivation, future laurels for the daring to win; and the time will come when the manipulation and removal of the organ will be as fearlessly undertaken and as successfully performed as ovariotomy is being performed at the present time.

SOME OBSERVATIONS ON DEAFNESS.

By J. H. Woodward, M. D.

Mr. President, Gentlemen,—

In presenting this paper to your attention, it is not my purpose to do more than briefly bring to your notice a much neglected, but very important point, relating to the management of deafness. Unfortunately, it is the custom of many general practitioners of medicine to ignore entirely the auditory apparatus, or to acquire only that dangerous minimum of knowledge of it. And the deaf are put off with the information that their family physician is not an aurist, or they are told, too often, that there is no benefit to be derived from treatment of their ears. He who devotes his life to general medicine should not become so wrapped up in the study of general diseases as to lose all consciousness of the existence of eyes and ears and throats, in the anatomy of his patients. Still, it is far better that total ignorance be confessed, if it exist, than that the physician advise his patient through ignorance or half-knowledge. The unfortunate results of such advice given to deaf patients, I have too often observed.

The human ear, fortunately, is endowed with a degree of hearing power in excess of the necessities of life. The tick of an ordinary

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watch may be heard by a normal ear at a distance of 45 inches. Hence, the loss of considerable hearing power may be unnoticed by the patient. For that reason, it is never safe to accept a patient's statement that his hearing is as good as ever.

Physicians and parents are too apt to attribute the lack of acute hearing in children to carelessness, or to inattention. Thus it happens that incipient deafness is allowed to develop and become incurable in many a child, who might at one time have been relieved of his affliction. The aural complications of scarlet fever and measles are permitted to run their own destructive course, unopposed, while physician and parent, alike, look on hopeless and inactive. The unfortunate patient is abandoned to a fate that embitters his whole life.

Ear-ache, the signal for active and intelligent interference, is too frequently regarded as an accident of childhood, or as a manifestation of the neuralgic diathesis. Ringing in the ears is lightly passed by as a phenomenon of "nervousness," and the victim is advised to outgrow it. Uncomfortable sensations in the ears are said to be due to some general disorder; and marked deafness is regarded as a hopeless affection of the auditory nerve.

The inevitable result of all this, is a matter of common observation. The great army of the deaf is receiving fresh recruits daily, whose future is saddened by hardness of hearing, or, more still, by incessant roaring in their ears.

Naturally the inquiry comes, Is this necessary? Must we sit quietly by and give no hope to these unfortunates? To me it seems that we may do much to prevent the increase of deafness, and much to relieve those who have already become victims of that symptom. I do not believe that many chronic cases of aural disease, in which the hearing distance is markedly reduced, can be cured, or even greatly benefited. They have passed the stage in which it was possible to relieve them of their malady; and, although the progress of the disease may be checked in these cases sometimes, still their present condition will not be improved.

The causes of deafness, as seen in this climate, are catarrh of the eustachian tube, and of the middle ear, and impacted wax in the external ear. Among many cases of deafness seen in this State, I have not found one that was due to disease of the auditory nerve or of the internal ear. The most frequent cause observed in my experience, is catarrhal inflammation of the tubes and middle ear. Such catarrhal inflammation of the auditory apparatus usually exists by virtue of the previous existence of a similar inflammation in the throat and nose.

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When these inflammations of the auditory apparatus have progressed far enough, they are not curable, and the symptoms arising from these are not removable. This is shown by the results of years of treatment, which, as every one knows, are in these cases very unsatisfactory; and it is because cases come to the aurists after they have passed to this stage, that the results are no better.

Inexcusable as it may be in any physician to overlook the presence of impacted wax in the external auditory canal, it is true that it is overlooked very often; and when it is found, it is absurd to advise the patient to syringe his ear himself. The wax may be removed by syringing, but it is not always easy to remove it, and patients are pretty certain to fail in their attempts. To advise syringing the ears for chronic deafness due to inflammation, is ridiculous.

Given a case of catarrh of the eustachian tubes, or of the middle ear, in the earliest stages, and treatment judiciously carried out will result in a brilliant success. Nothing can be more satisfactory in therapeutics, than the success which attends such treatment. You will see patients who have "caught cold," and whose hearing distance is perhaps less than six inches from the watch. The ears are uncomfortable, and the patients complain of roaring or singing noises in the head. Abandoned to their fate, such cases terminate in a few years in marked deafness; but all traces of the inflammation may be removed, and the case may be conducted to a complete recovery. These results are not uncommon. It is not safe, however, to overlook the nose and throat in these patients. A deflected septum, a turbinated hypertrophy, an adenoid vegetation, nasal polypi, enlarged tonsils and inflammation of the throat and nose, are constant menaces to the well-being of these patients. They should be attended to in the proper manner before the case is dismissed.

Ringing in the ears is the complaint which brings many patients to my office. In nearly every case, I find associated with it greater or less diminution of hearing. There is also some nasal or pharyngeal disease. By treating both the ears and the nose and throat, I have succeeded in curing a large number of such cases. The disease was seen early, and it was curable; but had the patients waited a few years or even a few months longer, they would have become hopelessly deaf.

Such observations have led me to make this the central point of what I have to say now: namely, that if we would relieve our patients of deafness, we must, first of all, see them in the early stages of their trouble; and, Secondly: we must not only treat the ears, but the nose and throat also. Even before the ears have become affected, such la-

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tent causes of aural trouble as exist in the nose and throat ought to be removed; for, in the changeable climate of our country, it is only a matter of time, when those, whose upper respiratory tract is diseased, will develop disease of the middle ear. The upper respiratory tract must be in good order to insure the integrity of not only the auditory apparatus, but that of the chief organs of respiration also. That diseases of the upper respiratory tract may be cured, even in the climate of Vermont, and even in spite of the dictum of many reputable physicians, is already a demonstrated truth.

INTUBATION OF THE LARYNX.

By John B. Wheeler, M. D.

Intubation of the larynx is no longer a great novelty, but as it has never been brought to the notice of this Society, it has seemed to me that a few words regarding the operation might be of interest.

The idea of introducing a tube into the larynx, for the relief of dyspnœa due to stenosis of that organ, seems, like many other ideas of modern medicine and surgery, to have occurred to Hippocrates, who recommends the admission of air into the lungs through a tube passed into the throat. But this hint from the Father of Medicine was never taken by any of his disciples until the beginning of the present century, since when a number of experimenters in this country, England, France and Germany, have made the attempt. With only two exceptions all the experiments were made with long tubes, laryngeal catheters, which, after introduction through the mouth or nose, were allowed to remain *in situ* with one end in the larynx, and the other projecting from the orifice through which the tube was introduced. None of these attempts with long tubes gave satisfactory results, and of the two attempts made with short tubes only one has attained any degree of success. In 1858 Bouchert of Paris first made use of a short laryngeal tube, but his success was far from perfect, and the cold water thrown upon his ideas by the Academy of Medicine caused him to relinquish all efforts to perfect them.

In 1880 O'Dwyer of New York began a series of experiments which resulted, in 1886, in the production of a set of laryngeal tubes such as I shall, in a moment, have the pleasure of showing you. It is the introduction of these tubes for the relief of the dyspnœa of diphtheria and membraneous croup which has attracted so much attention during the

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past year, under the name of Intubation of the Larynx. O'Dwyer defines this term as "the introduction through the mouth of a tube which rests wholly in the larynx and trachea, and allows the epiglottis to close over it in the act of swallowing." The instruments used in intubation consist of the tube, the obturator, the gag, the introducer, the extractor and the gauge. The tube has a flat head to prevent it from slipping down into the trachea, and a spindle-shaped enlargement of its middle to prevent it from being too easily expelled from the larynx.

The method of operating is as follows: A tube of a size appropriate to the patient's age is selected, and the small hole at the upper end threaded with strong silk. The obturator is then screwed to the introducer, and inserted into the tube in such a way that the projecting portion of the head of the tube shall point backward when *in situ*, and thus enable the epiglottis to close over it. The child is held in a sitting posture in the lap of an assistant, with its head slightly thrown back against the assistant's left shoulder. A second assistant steadies the head. If the child has no teeth the gag is not needed, but if it has, the gag is inserted well back in the left corner of the mouth. The epiglottis is then pulled forward with the operator's forefinger, which serves as a guide in the introduction of the tube. The tube is then passed into the mouth, with the handle of the introducer held close to the chest. As the tube approaches the larynx the handle of the introducer is raised until, as the tube passes into the larynx, the handle is at right angles with its first position. The obturator is then detached from the tube and withdrawn, the operator's left forefinger is taken out of the mouth, and after waiting a minute or two to see that all is right the silk thread is cut and withdrawn, leaving the tube in the larynx. To extract the tube the extractor is passed into the mouth in the same way as the introducer, the beak inserted into the tube and opened, and the tube withdrawn.

(A set of O'Dwyer's intubation instruments was here exhibited, and the method of introducing and extracting the tube demonstrated.)

Intubation is easily done after a little practice, but the difficulty to a beginner is sufficiently great to make it very desirable for him to practice on the cadaver before operating *in vivo*, unless he happens to be fairly well skilled in the use of laryngeal instruments. It is more difficult to get the tube out than to put it in, owing to the smallness of the orifice into which the extractor has to be inserted.

While the tube is being inserted, and before the obturator is withdrawn, the larynx is completely closed. Undue prolongation of this stage of the operation would, of course, produce suffocation. It is

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therefore recommended, in case insertion is not readily accomplished, to withdraw the tube and repeat the manœuvre quickly, making a number of brief attempts, if necessary, rather than a single protracted effort.

In intubation, as in tracheotomy, the after-treatment relates to the management of the tube and to the general treatment of the patient. The situation of the tube renders it less accessible than the tracheotomy canula, but fortunately it requires much less attention. As the air is warmed and moistened in intubation by passing through the natural air-passages before reaching the tube, the secretions do not dry on the inside of the tube and fill up its lumen as readily as in tracheotomy. Nevertheless, the tube is sometimes obstructed by membranes. In such cases it is almost always coughed out of the larynx, tube, membrane and all. In that event the physician is obliged to replace it, but as the space made in the larynx by the tube does not close up for some hours after its expulsion, the patient breathes easily during that time, and there is abundant opportunity for re-introduction. It was for some time supposed that the tube would always be coughed out when obstructed, but a very few cases have been reported, (the first, I believe, by myself in the New York Medical Journal, Feb. 26, 1887,) in which the tube was obstructed and the patient was unable to cough it out. Death from suffocation of course resulted, as the physician was unable to reach the patient in time to extract the tube. The moral of such cases is that the physician should be summoned to remove the tube and clean it, whenever there is the slightest evidence of beginning obstruction.

The length of time that it is necessary to keep a tube in the larynx varies, but a limit of six days is rarely exceeded.

One of the most important points in the treatment of patients after intubation, relates to the administration of nourishment. Some patients will swallow any food or drink without the slightest trouble, while others cannot take any liquid without getting some of it into the tube and starting up a good deal of coughing. The majority seem to get on pretty well, and are only occasionally troubled by the entrance of liquid into the tube. It is generally advised to feed the patient on solids and semi-solids of a bland nature, and to give as little water or other liquid as possible. Dr. Ingalls of Chicago, who believes that pneumonia is often caused by the entrance of liquid into the lungs through the tube, absolutely forbids the administration of any liquid by the mouth while the tube is *in situ*. Dr. O'Dwyer, on the contrary, has found no evidence on post-mortem examination that pneumonia is ever caused by

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ingesta. He considers an occasional coughing-fit a good thing, as helping to keep the tube clear, and advises that whenever a drink is taken, as large a quantity as possible should be swallowed at once in order to excite a cough.

As regards other treatment O'Dwyer, according to his own statement, (Reference Hand-book of Med. Sciences, Article, Larynx, Intubation of,) gives "no medicine after the introduction of the tube, except for complications or to procure rest." Other operators, as Huber of New York, give mercury throughout the whole sickness. Medicinal treatment after intubation will probably vary according to the ideas of the operator. The temperature of the patient's room should be equable and rather warm. O'Dwyer recommends the use of an alkaline solution in a steam atomizer, in order to prevent the secretions from drying on the inside of the tube.

The pros and cons of intubation may be stated as follows, beginning with the cons:—

I. The tube may be plugged with membrane, thus suffocating the patient.

The possibility of this accident has already been referred to. It has been claimed that it occurs on account of the small calibre of the tube. O'Dwyer, however, believes that the best tube is the one which has the smallest calibre compatible with a sufficient air supply. The smaller the calibre of the tube, the greater the expulsive power of the cough, and consequently the more thorough is the clearing of the tube. A small tube easily cleared is better than a large one cleared with difficulty. Add to this the ease with which an obstructed tube is generally coughed out, and the extreme rarity of plugging without expulsion, and it will seem that O'Dwyer's ideas about the calibre of his tubes are correct.

II. Liquids may get into the trachea through the tube.

This subject has been discussed under the head of after-treatment. Liquid is known to run into the trachea in some cases of tracheotomy and in some cases of laryngeal diphtheria, in which there has been no surgical interference whatever, as well as when intubation has been performed. But it is so much commoner in the latter case, that we must believe that the presence of the tube often hinders the proper closure of the larynx Perhaps some modification of the tube may be devised which will meet this objection. If not, it is not so difficult to introduce liquid into a patient's rectum, that the necessity of doing so for a few days need be considered a great objection to any operation.

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III. The tube may be blocked by pushing a piece of membrane down in front of it during introduction.

This is the greatest drawback to intubation, though it does not often occur. In tracheotomy the same unpleasant complication is sometimes met with. When it occurs in intubation, the tube should be instantly removed and a shorter one substituted for it. If this affords no relief tracheotomy should be performed, in the hope of getting into the trachea below the membrane.

Passing the tube into the esophagus instead of the larynx, and making false passages in the attempt at introduction, should not be considered as objections to intubation, since they are the result of carelessness or lack of skill, like wounding the œsophagus in tracheotomy.

The advantages of intubation are the following:—

I. It is an operation to which parents and friends of the patient readily consent, thus giving many children a chance for their lives, which is refused them if tracheotomy is proposed.

II. No trained assistants are required in the performance of intubation. Two persons with sufficient nerve to hold the head and hands of a crying child are all that are necessary.

III. Intubation can be done far more quickly than tracheotomy.

IV. There is no continual cleaning of the tube to be done after intubation, and the whole after-treatment does not require such skillful care as after tracheotomy.

V. In intubation the air enters by the natural channels, and is much better warmed and moistened than in tracheotomy.

VI. The cough through an intubation tube is stronger, and clears the bronchi better than the cough through a tracheotomy tube.

VII. If intubation fails, tracheotomy still remains as a last resort.

The statistics of intubation, although they seem to improve as the operation is practiced more and more, are not yet equal to the published statistics of tracheotomy. In a paper by Dr. Dillon Brown, read last June before the New York Academy of Medicine, the percentage of recoveries after intubation is stated to be 27.07 per cent. Agnew gives the percentage of recoveries after tracheotomy as 30 per cent. These figures, however, are somewhat misleading. Intubation is undergoing a searching test, and the great majority of operations are published without regard to their result; but death after tracheotomy is so common, (especially in private practice where the mortality is far greater than in hospitals,) that comparatively few operators think of publishing their fatal cases, unless they have a long list of tracheotomies to report. On the contrary, if a man is lucky enough to be successful

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in a few cases, he naturally is so pleased that he is very apt to publish them. The probability is that if the list of published tracheotomies were as complete, in private as well as hospital practice, as is the list of published intubations, the percentage of recoveries of the tracheotomy would be much lowered.

In conclusion, it may be said that, while intubation is not yet sufficiently well established for the formation of exact opinions as to its results, it has already proved itself to be a useful and beneficent operation. Whatever may be its final position as compared with tracheotomy, there can be no doubt that it will be allowed to save many lives which never would have been intrusted to the cutting operation.

A CASE OF TETANUS NEONATORUM.

By Edward R. Campbell, M. D.

This case occurred, if my judgment is correct, as the result of a so-called "mother's mark."

Dr. J. S. Richmond, in his excellent paper on "Mother's Marks," published in the Transactions of our Society for 1882, says "the defect may be a lack of development, an excrescence, or an abnormal arrangement of the tissues—anything indeed abnormal, either physical or mental, purely and truly chargeable to mental or emotional conditions of the mother at sometime during her pregnancy."

The case has the following history:—

The mother of the child is a very fleshy woman, aged about thirty. Some four years previously she was first delivered, after having been in confinement for two or three days, by craniotomy, the child probably having been dead for at least some hours. The child was large, and the woman also probably has a slightly contracted pelvis. Two years later she was delivered of a living and healthy child, forceps being used, after, as she described it, a long and tedious labor, she being in New Hampshire at that time.

When she was about three months pregnant with the child that died of tetanus, a young man about twenty years of age, a relative of the family, was injured, the wound being an extensive superficial one, involving the skin and superficial tissues of the calf of leg. This case was under the care of Dr. E. S. Allbee, and was seen by myself with him. The wound was apparently in a healthy condition, but about the ninth day symptoms of traumatic tetanus developed, and the patient

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had recurring spasms during the next six days, when death closed his misery.

During all his sufferings the pregnant woman had the principal care of the patient, and was obliged to witness his extreme distress from the oft recurring tetanic spasms. At this time and afterward, during her pregnancy, she often expressed the fear that her child would be marked. She went to full term without anything of note occurring, and had a fairly easy confinement, the head being delayed somewhat at the superior strait. At birth the child was somewhat asphyxiated, and the cord, which was very large, was allowed to bleed quite freely. In a few moments respiration was fairly established and the cord was tied. Later in the day it bled somewhat, staining the clothes, but was easily controlled by another ligature.

Some three or four hours after birth I was hastily summoned, the messenger saying that they thought the child dying. On my arrival I found the child breathing quietly, but having had, as the grandmother thought, a spasm of several minutes' duration. I left a weak solution of bromide of potassium, with directions to give it in case of another spasm. From that time until the sixth day the babe did as well as any new born baby; bowels, urine and cord being seemingly in normal condition. On that day the child commenced to have tetanic spasms, and any attempts at nursing, swallowing, or disturbing it in any way seemed to increase their frequency and severity. The little sufferer died on the seventh day after birth, and somewhat less than forty-eight hours after the commencement of the spasms.

I regret to say that I did not use my thermometer, but the sense of feeling would indicate a normal temperature, the head even not feeling hot. There was very little treatment in the case, every attempt at swallowing seeming to aggravate the spasms, and we tried no chloral or other medicine by rectum.

I find but very little said in most works on tetanus neonatorum, but take the liberty to quote Dr. Wm. B. Atkinson of Philadelphia.

He says, in his "Hints on Obstetric Procedure":—"Tetanus of the new born is at present of extremely rare occurrence and of the greatest importance. It generally begins from the fourth to sixth day from birth. The author has seen but two cases; both were the result of injury to the navel. The prognosis is always grave, as death is almost sure to result, generally by the end of the second day." He speaks of chloral as the remedy that should be tried either by mouth or rectum, but also says "that all authorities agree that every form of treatment alike fails to relieve."

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This case seems to me not only an extremely unusual one when viewed simply as a case of tetanus neonatorum, but when looked upon as the result of the mental condition of the mother during pregnancy, or, in other words, a "mother's mark," as I firmly believe it should be from my personal experience and research, I regard it as an unique case in the annals of medicine.

FOUR CASES OF LUNG DISEASES.

By F. H. Cilley, M. D.

Mr. President and Gentlemen,—

My purpose in reporting these few cases of lung disease, is to bring to the notice of this Society a peculiar form of pneumonia, or at least peculiar to me. I don't know but you have all seen cases like mine, but I have never seen anything like it till I located in the town of Jericho. The cases have all occured at or near the base of Mt. Mansfield, in the towns of Bolton and Jericho. The first was Mrs. F. W. H., of West Bolton, wife of the merchant at that place. I was called to see her on the 5th day of December, 1883. She was 28 years of age, the mother of two children, the youngest six years of age. I found her with a temperature of 102 and complaining of great pain in right side. Pulse 110, respiration 35 to 40 per minute. She had been in her usual health until this day. I found upon percussion and auscultation that the right lung was completely filled up, or solid, as I could get no respiratory murmur, and a dull sound on percussion of the right side of chest; feet and hands were inclined to be cold, and a cold sweat over the surface of body; great difficulty of breathing; the symptoms were about as stated for two weeks. The temperature ranged from 102 to 103. At the end of two weeks the patient began to be a little more comfortable. There was a dry cough with but little expectoration, which was a little streaked with blood a day or two. The lung was solid all this time, and did not clear up for a number of months. It is clear now and the woman in perfect health, as she passed a satisfactory examination for life insurance a few weeks since. She had been sick but a few hours when I first saw her, otherwise I might have thought it a case of pleurisy with effusion. The treatment was on general principles. I used flaxseed-meal poultices till the acute symptoms were past; then she was painted with Tr iodine every other day. What

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seemed peculiar to me was the solid lung on my first visit, and it being the beginning of her sickness.

CASE II. Mrs. M. S., of Jericho, of Irish descent, aged about 45 years, and by occupation housewife. I was called to see her about midnight in the month of March, 1885. I found her in the same condition as case No. 1, with the exception of more trouble about breathing, with less fever, a great deal of pain in side, and nausea. This patient was not as sick as No. 1, but made a slow recovery. She was treated about the same as No. 1. She enjoys very good health at the present time, though the lung is not clear yet.

CASE III. Mrs. Geo. T., of West Bolton, 36 years of age, American, the mother of seven children. I was called to see her in the night also, in the month of February, 1886. I found her suffering much pain in right side of chest, temperature 102, pulse over 100, respiration 40 per minute. The right lung seemed to be wholly filled up, or in a state of hepatization. She remained in this condition about two weeks, when she began to improve. This patient had to be bolstered up in her bed, as she could not breathe in the recumbent position. It was six weeks before she was able to work about the house. I made an examination of her lung about two months ago and found the lower portion still hepatized. Treatment same as the other two. My other case is a son of this woman, eighteen years of age. This boy has not a good record as to health; he has necrosis of the left femur since seven years of age, that discharges a little now and then. I was first called to see him June 11, 1886; learned he had been sick about one week; had had a doctor to see him twice, who told him on his second visit that he had a "bilious turn." and that he would be all right in a day or two. On my first visit, I found his left lung hepatized, his temperature 101, pulse 100, respiration 30 per minute. He soon got about, but the lung did not clear up. I cannot say his lung was hard at the beginning of his sickness, but, from the history of the case, I should say it was. For the last six months the boy has been under my treatment for consumption; he has cough, night sweats, loose bowels, etc. About the first of August he took a hard cold, and got a relapse of the original trouble, pain, fever, short breath, and the lung hardened up at the beginning of the acute symptoms; the whole lung was solid. After a few days the fever subsided and he got out again. I gave him the "new treatment" for a short time. I thought it made his bowels worse and gave it up.

Dr. A. F. Burdick, of Underhill, was called in consultation to my

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first case. He claimed to have had some 20 cases like that one. He considered it something unusual in the line of lung diseases. His cases all recovered but one or two, but it was slow. His cases all lived near the foot of Mt. Mansfield.

It was not my purpose to discuss the treatment of lung disease, but it occurred to me that they were peculiar cases; they are certainly different from the cases of pneumonia that I have seen. In a very few hours after the patients were taken sick, the lung on the affected side was found to be solid. If it was pleurisy with effusion, we would expect to get a history of a few days' sickness before we would find this state of things. I treated my cases on general principles. I gave Dover's powder to relieve pain with sedatives, cathartics, etc., in the first stage. Externally I used flaxseed poultice for the first few days, and then counter-irritants as long as indicated.

Has the location anything to do with this peculiar state of things? Dr. Burdick thought it had. Our cases were all near the mountain, and also near streams of water. If other members of this Society present have had such cases, I should like to have them report.

I have written up these cases from memory, but the facts in each case are correct. Should I meet with other cases of a like nature, I shall keep a careful record of each case, and should they seem of sufficient importance, shall be glad to report to the society.

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THE CLIMATE AND DISEASES OF MESOPOTAMIA.

By D. H. Nutting, M. D.

The city of Diarbekir, in Northeastern Mesopotamia, where I resided more than nine years, is situated near the 38th degree of north latitude; and we may say, in general, that its climate is temperate. The mean temperature of the place, according to carefully taken observations for several years, recorded by myself, was 62°. From comparing this with the mean temperature of cities on the same degree of latitude in other parts of the world, we find that the former exceeds the latter, in most cases, by five or six degrees.

For instance, the cities of Washington and St. Louis, in the United States, which are near the 38th degree, have a mean temperature of 55° 56 and 55° 86.

The isothermal line which passes through Diarbekir in going westward, falls much to the south, passes near Oorfa and Aleppo along the northern coast of Africa, and enters the United States of America nearly on the 32d degree of latitude, or near Charleston, S. C.

It is not for me to attempt to account for the fact; and I will only say that the increased temperature of Diarbekir and Oorfa with the intervening and surrounding region may be, in part, owing to the proximity of the great Arabian desert, and the moderate altitude of the extensive plains upon which these cities are located.

During my residence of nearly two years in the city of Oorfa, which is about one hundred miles southwest from Diarbekir, and fifty miles east from the river Euphrates, I found the temperature of the place to range about eight degrees higher than at Diarbekir. The lowest was 27° above zero, and the hottest 115° in the shade. On account of the extreme dryness of the climate, this high degree of heat is not so discomforting as 95° is in a moist atmosphere.

It is a well-known fact that the temperature of the atmosphere has a very decided influence in modifying human health. It is observed that there are certain classes of diseases which may always be expected to be found in hot climates, and certain classes which are peculiar to cold climates; and that in temperate climates there is an admixture of these, usually in proportion to the duration and severity of the cold and hot seasons.

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Bearing these facts in mind, we are able to account for the fact which I am about to state, that the diseases of Diarbekir, Oorfa, and all of Northern Mesopotamia, are chiefly those which are ordinarily found in places situated several degrees nearer the equator than is this region.

Diarbekir has the reputation of being one of the most unhealthy cities in Western Asia. From careful observation during a residence of more than nine years, and from comparing it with seventeen other cities of Turkey which I have visited, and in several of which I have resided, and concerning which I have obtained reliable information, I am fully satisfied that it deserves the ill-repute it has acquired.

The diseases most common there are fevers, diseases of the secretory organs, and diseases of the organs of digestion.

The fevers are, for the most part, the intermittent, remittent, and the congestive, or malignant remittent. I had seen very few cases of the typhus or typhoid fever until the Circassian immigration commenced in 1861. More than one hundred thousand Circassians, feeling that the Russian government was intolerant toward them on account of their holding the Mohammedan faith, fled to Turkey, and scattered themselves in little colonies all through the eastern portion of Asiatic Turkey. Wherever they went they brought the typhus fever with them, and from them it spread among the original inhabitants of the towns and villages where they located.

In the winter of 1864–5, in the city of Oorfa, several hundred cases occurred; and of those treated by the native physicians the larger portion died. Of the hundred cases which came under my care, I think I did not lose any, excepting a few who had been treated by native doctors for several days before I saw them.

Very frequently fevers which were remittent at first, if not properly treated, would run into continued fever.

Of the intermittent fevers the *quotidian* variety is the most common, the *tertian* and *quartan* being seldom found except in the cooler months.

These malarial fevers were usually, without great difficulty, cut short with quinine, but were very likely to return repeatedly unless the quinine was continued for some time in small doses. During the spring and summer I think the remittent fever was the most common. Very few families escaped having one or more cases; and though they might usually be stopped during the first three days with proper treatment, if they were allowed to pass that time without treatment they would usually continue two weeks, and often run on to a fatal termination.

Cases of the congestive, or malignant remittent fever, are frequently

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met with, and often prove fatal if not cut short before the third paroxysm.

I consider the malaria arising from the extensive irrigated gardens near these cities, and the irrigated rice and cotton fields near the villages, to be the cause of these intermittent and remittent fevers. The imprudence of the people in eating and drinking, probably, aggravates the effects of the malaria. They usually attribute these fevers to drinking bad water, or eating melons, and expose themselves to the night air continually, sleeping during summer on the flat roofs of their houses, or on the ground when watching their fruit, or their threshing-floors, and when on journeys.

During my residence of twenty years in Turkey, being a physician, I was liable to be called out at all hours, and therefore unable to protect myself from the malaria to that extent I could have desired; and hence I had frequent attacks of intermittent and remittent fever, averaging perhaps half a dozen a year.

Dropsy, enlargement of the spleen and liver, and diseases of the bowels are, I have noticed, the frequent sequels of these fevers. Immensely enlarged spleens are very common, and are often to be found in those who have seldom or never had any attacks of the fever, so far as they know.

Both acute and chronic diseases of the liver are quite common. Hepatic abscesses are of frequent occurrence, and jaundice is often observed.

Ascites, or dropsy of the abdomen, is very common, and is almost always traceable to pre-existent disease, and generally to disease of liver or kidneys; to diarrhœa or dysentery, or to the fevers spoken of above.

Bright's disease is not uncommon. Of urinary calculus I do not remember to have seen a single case among the natives of Diarbekir; but in Oorfa and Aintab it is quite common, owing, probably, to the different geological formation of those localities,—the white limestone rock abounding in the latter regions, while in the former the basaltic prevails. Dr. Nersis, of Aintab, (once a student of mine,) has operated for stone in the bladder more than a thousand times, with almost uniform success.

Acute and chronic gastritis is common. Dyspepsia, in all its forms, is a disease constantly met with, especially among the rich Turks, who lead indolent lives, and are prone to gluttony and excesses of all kinds.

Cases of dysentery and diarrhœa, both acute and chronic, are of frequent occurrence, and in many instances are with difficulty controlled and brought to a desirable termination.

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Pneumonia and pleuritis occur to some extent during the winter months. Phthisis pulmonalis and bronchitis are rarely met with in Mesopotamia. The dry, mild climate, allowing persons to be much in the open air, and the custom of riding on horseback, seem to prove favorable to those naturally predisposed to these diseases of the lungs.

Variola has prevailed extensively at times. A few years ago it was supposed that three thousand persons died of it in one year in the city of Diarbekir. Vaccination is now practiced to a good extent. For a considerable period I was accustomed to vaccinate gratuitously all children brought to my dispensary on Wednesday afternoons, and sometimes I would find fifty children there at once, awaiting the performance of the operation by myself and assistant.

I think I did not see a case of scarlatina in Mesopotamia, and did not learn that it had ever been there, although north of the Taurus Mountains, toward the Black Sea, I understand it prevails to a limited extent.

Scrofula prevails, especially in the large cities. Diarbekir and Oorfa, the chief cities of Northern Mesopotamia, are both located on plains and surrounded by walls sixty and forty feet high, respectively. These walls greatly hinder the circulation of the air through the narrow, filthy streets. The houses are built of stone, around open courts, having windows opening into these courts and not upon the streets. The rooms and walls around are from fifteen to thirty feet high. Thus a free circulation of air in the rooms and courts is not often secured. During the rainy season these houses absorb much dampness, and as they are not heated by stoves, or otherwise to any extent, the rooms are very chilly during most of the winter. These facts, together with the fact that the habits of these people, in many respects, are bad; that they live often in crowded rooms, which, generally not being provided with glass windows, are darkened in cold weather by the closing of the shutters; and the fact that it is the general practice to marry females who are only 12 to 14 years of age,—are sufficient to account for the development of this malady.

Syphilitic diseases are very prevalent; and nowhere have I ever seen so many horrid results of the disease as there. Multitudes of people are *rotten* with it, having either been without any medical treatment, or been mal-treated by the uneducated native doctors (and barbers who practice surgery). It is called by the natives "*the Frank illetti*," or European disease.

Cutaneous diseases of all kinds are abundant; but the the disease of the scalp, named *Porrigo Favosa* by Cazenave, is the most common

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and most troublesome. The people wear the "*fes*," or red cap, with or without the turban continually, night and day, and often for a long time without change or cleansing; and this renders the disease more difficult to be cured. Baldness is a frequent result of the disease.

Diseases of the eye are always found in abundance among the people. Wearing the "*fes*" and generally small turban, their eyes are very much exposed to the sun. They often, too, go from their dark rooms out into the glaring sunlight. During the dry season, a little wind fills the air with dust and sand. This exposure to sun and dust no doubt contributes to the production of ophthalmia, as well as the idea the natives have that it is injurious to wash the eyes with cold water. Prevalent conjunctivitis is very common, and ulcers and opacities of the cornea are numerous. Cataract is comparatively rare.

During my residence in Mesopotamia, from 1854 to 1865, the cholera did not not visit that region; but only a few months after we started homeward, it visited Diarbekir and Oorfa, and in the course of a few weeks several thousand persons died. The following year it also prevailed, but to a less extent. So also it prevailed in that region and in Northern Syria in 1875, just after we started for America the second time.

Throughout all of Mesopotamia, especially in all the large cities from Aleppo to Bagdad, the disease called "the Aleppo evil," the "*Button de Alep*," as the French call it, is prevalent. In Diarbekir it is called the "*Yull Chibou*," or year sore. In Bagdad it is called the "Date mark." In Oorfa it is called *ironically* "Guzellik," or beauty. It consists in the eruption of one or more tubercles, generally on the face or hands, which gradually increase in size during four or five months, and then ulcerate and continue to discharge a fetid matter for four or five months more, when dessiccation ensues, leaving a disagreeable scar, and sometimes resulting in a distortion of the eyelid, nose, or lip. It is not painful excepting during the ulcerating stage, and then only when dressed or interfered with. They vary in size from half an inch to one inch in diameter. They always make their appearance in the autumn. Like the small-pox and some other diseases, it never returns to a person who has once had it. A person may have one, or he may have seventy-five, which is the largest number I recollect to have seen upon one person. I had only one;—one of my children had forty-six.

It is by some supposed to be caused by the bite or sting of a fly, peculiar to that part of the world. The natives generally attribute it to the drinking of water brought to these cities from a distance by old Roman aqueducts, and which contains a great amount of impurity,

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organic and inorganic, vegetable, animal and mineral. There are several facts which incline me to this opinion. Those who always filter their water before using do not have the disease; and the inhabitants of the villages around these cities, do not have it unless they frequently come to the city and drink of this water. I did not have it so long as I drank filtered water. So also Bessim Pasha, Izzet Pasha, and many others, who upon my advice were very particular to use filtered water.

Many curious facts have come to my knowledge in regard to this disease, which I find it difficult to explain. For instance, it prevails in the cities of Oorfa and Diarbekir, which are about a hundred miles apart; but in the smaller city of Severek, half-way between, it does not prevail. It prevails in the cities of Aleppo and Aintab, which are about seventy-miles apart, but in the larger town of Killis, about midway, it is never seen. At Aleppo I was told that it was never found in towns to the west of that city, while it prevails in towns and cities north and east. The inhabitants of the cities of Mosul and Bagdag, where it also prevails extensively, generally drink water brought from the river Tigris, upon the banks of which they are built.

Now what can we learn from these facts?

The cities of Diarbekir, Oorfa, Aintab and Aleppo are supplied with water chiefly by means of aqueducts. That of Diarbekir is some eighteen miles long, and is supposed to have been built some fifteen hundred years ago. The water, pure at the source, becomes very much roiled on its way to the city. Allow a glass of this turbid water to stand a few hours, and quite a thick deposit of sediment will be found at the bottom. I have been informed that the men employed to keep the aqueduct in order use "*Zibbil*," or horse manure, in stopping leakages.

The aqueduct of Oorfa is of ancient origin, but only some six miles in length, I think. That of Aintab is about the same length.

Aleppo is supplied with water from two springs, which rise near Hey-lan, a village about twenty-four miles northward. From hence it is conveyed by an aqueduct, partly on a level with the ground and partly subterraneous, refreshed by air shafts till it reaches the city. It is then distributed to the public fountains, baths, seraglios, and as many of the private houses as choose to be at the expense, by means of earthen pipes. This aqueduct is supposed to have been coeval with the city, but is said to have been repaired by the mother of the Emperor Constantine, and subsequently by "*Al Melek el Daher*," the son of *Saladin*. It is cleansed annually in the month of May.

Now, if we accept the theory generally prevalent among the natives

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of these cities, that the disease is caused by drinking the water supplied to them by these aqueducts, and which doubtless contains great quantities of animal, vegetable, and mineral impurities, how shall we account for its prevalence at Bagdad and Mosul, where the people drink the river water, which appears as pure as river water ordinarily does?

The inhabitants of Severek, where the disease does not prevail, drink chiefly well water.

In the city of Mardin, between Diarbekir and Mosul, where the disease does prevail, the inhabitants generally drink rain water, preserved in large deep reservoirs cut in solid limestone rock. As there is no rain from May to October, the water, the latter part of summer, is not very fresh, and contains multitudes of little red worms, so large that they can be caught in a milk strainer in quantities. By some this tubercular eruption is supposed to be caused by a little worm, or animalculæ.

Treatment:—Prevention by means of inoculation has been tried unsuccessfully. Application of iodine in early stages has seemed to lessen their size, and diminish the scar consequent upon them. Application of solid nitrate of silver, or nitric acid, to small ones, has arrested progress.

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OBITUARY NOTICE OF SAMUEL J. ALLEN.

By E. F. Upham.

Samuel Johnson Allen, of White River Junction, died August 8, 1886. His illness was of short duration, less than a week; as on Wednesday, before his death, he was at his place as chairman of the pension examining board; but the exposure, with the fatigue, aggravated unmistakable symptoms of disease of the kidneys, that were developed some days prior, and he rapidly went down with the usual effects of uræmic poisoning.

He was born at Newport, N. H., January 8, 1819, and was the eighth child of David and Hannah (Wilcox) Allen; was educated in the common schools and academy of his native place, and in 1839 commenced the study of medicine under the tutorage of Dr. John L. Swift of Newport, and subsequently continued it under the instructions of Prof. Dixi Crosby. He graduated in Vermont at Castleton Medical College in 1842, and located at Norwich, Vt. In 1844 he was married to Mary Lyman, daughter of the late Lewis Lyman, who still survives him, also three sons. January, 1844, he removed to Woodstock, Vt., where he opened a drug-store in connection with his practice. June, 1845, he removed to Hartford, Conn., where he resided, and engaged in the practice of his profession until March, 1847, when he returned to Vermont and located at White River Junction, where he has since resided. He was appointed surgeon of the 4th regiment, Vermont volunteers, July, 1861, and soon, with his regiment, marched to the front, and for twelve months remained with the regiment and diligently ministered to its needs. December 15, 1862, he was appointed surgeon of the Vermont brigade, and acceptably discharged the duties of the position for about three months, when he was appointed surgeon of the second division of the sixth army corps, a position he effectively filled until September 21, 1864, when he was honorably mustered out of service. The relief from military service was occupied by a brief visit to his home. When he returned to the army he was appointed acting staff surgeon in U. S. A., and assigned to duty as medical inspector in the sixth army corps. This office he retained to the close of the rebellion, and was finally mustered out in July, 1865. He was present at every notable engagement in which his command bore a part, from and after the first battle of Bull Run to the end of the war, with the single exception of the disaster at Balls Bluff. He was twice wounded the same day at Opequan Creek, and subsequently had sev-

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eral marvelous escapes from injury and death. During his army service Dr. Allen was frequently dispatched to perform difficult surgical operations in different sections of the army. On his return to civil life he resumed practice at his old field, where the ability acquired by long experience was highly appreciated. His disciplined skill was known more widely than the limits of his State. In the courts of New Hampshire, as in those of Vermont, his services as an expert were often called into requisition. He was also a valuable contributor to the science and art of medicine and surgery. As an example, he claimed to be the discoverer of the method of reducing dislocations of the hip, by raising the hips and lower part of the body by the flexed legs, and thus holding immovable the weight of the hips and opposite limb, rotating the body outward, thus producing just sufficient abduction and extension to quietly draw the head of the femur through the slit in the capsular ligament and direct it into the acetabulum. He also claimed to have devised a treatment for fractured clavicle by means of adhesive plaster strapping, giving better results than the usual methods of treatment. A full account of these methods practiced by him has been published in medical journals, and also read before the medical societies in Vermont and New Hampshire. Dr. Allen was honored with official station in all the medical societies with which he was connected. In 1878 he was president of the White Mountain Medical Society. In 1883 he was delegate from the Vermont Medical Society to the American Medical Association, met at Cleveland, Ohio. He was one of the consulting surgeons of the Mary Fletcher Hospital at Burlington, Vt., from its organization. In politics he took a lively interest, early espousing the principles of the Republican party. He was elected a member of the State Legislature in 1880, also in 1882, and was chairman of the Committee on the Insane; also chairman of the Committee on the Board of Health. In 1880 he was chosen chairman of the Supervising Board of the Insane, and so fully justified the wisdom of the selection that he was re-elected in 1882. Possessed of a large fund of medical erudition, and fortified with that better knowledge which is gained only by an observant, active practice, he has left for us a record as one devoted to his profession, and his country as well, and a name that commands the respect of his professional acquaintances, and also one that the soldiers who came under his care will not soon forget, or cease to respect; and without idle adulation it may be said that he was the peer of Vermont's medical men—a State that has given birth to not a few who have made themselves excellent and eminent practitioners of the healing science and art.

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OBITUARY NOTICE OF E. A. GREEN.

Eli Amhew Green, M. D., was born August 31, 1821, in Cheshire, Mass., being one of six children—two brothers and three sisters. One brother is a banker in Jordan, N. Y., and has also been in the lecture field for some time past. The other, for many years, has had control of the flannel department of the firm of H. B. Claflin & Co., of New York city. Two of the sisters still survive, one of them having high literary attainments.

Salmon Green, the father of this family, moved from Cheshire, Mass., to Jordan, N. Y., when the doctor was yet a little child, and at this place his boyhood was spent. His studious habits and great mental vigor especially distinguished him as a youth of much promise, and his services were sought and highly appreciated as a teacher in the best schools of that vicinity.

In early manhood he came to Richmond, Vt., entering the employ of his uncle, Hon E. B. Green, as clerk in his store. While there he made the acquaintance of Miss Louisa A., daughter of Hon. Roswell B. Mason, to whom he was soon after joined in marriage, and with whom the remaining years of his life were spent. His love for study did not cease, yet circumstances were such that he deemed it best to give up the study of medicine, which he had already commenced; and becoming quite interested in dairying, he gave his attention to the manufacturing of cheese. By close study and ready insight into the science of dairying, he soon made "Mason's Factory" the most noted brand of cheese in the country.

During all these years, however, he was constantly storing his mind with those thoughts which are to be gathered from reading and digesting the best class of literature, his home abounding with the latest and best works which the press afforded; and a visitor to "the cheese factory" most invariably found some of the standard magazines or papers, where he had laid them down when duty called him from their perusal. Thus his love for study and scientific research was constantly fed, and people whose pleasure it was to form his acquaintance found a broad and comprehensive mind, his views upon all subjects being liberal and progressive.

The theologian found not only a ready listener, but one who could discuss the subject in a most interesting and instructive manner. The scientist found him well versed in the latest chemical and mechanical discoveries of the age. The student found him the genuine and most

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thorough teacher. His early desire to study medicine was still strong. At the age of fifty-three, and in the face of many obstacles, such as advancing years and family cares, he again commenced the study he had chosen in his younger days, reading medicine with Prof. A. P. Grinnell, of Burlington, and graduating from the University of Vermont in class of 1878, with high standing. Thus at fifty-six years of age he commenced the work which nature had so admirably fitted him for in early life. All of his professional life was spent among the people of Richmond, Vt., and much sooner than the ordinary practitioner he stepped into the front rank, being often spoken of by fellow-physicians as one of the best posted and safest of our number.

The kindness and sympathy which went hand in hand with his professional work, endeared him to the people he served so faithfully. That he gave too great service in both time and strength for the recompense he received, was the universal admission of all who knew him and his work. To him the practice of medicine seemed to be, not so much for the financial gain, as for the satisfaction that he had met, diagnosed and treated a case successfully. Many very obscure and difficult cases came under his observation and treatment with excellent results.

February 7, 1886, he was stricken with apoplexy while yet in the harness. He had been feeling quite poorly for a number of weeks, and was planning to take a vacation for the purpose of getting the much needed rest. About a week previous to his death, he wrote Dr. Janes of Waterbury as to his condition, and requested that he visit him, the result of this interview being a reassurance that he was overworked and must rest.

Saturday, February 6, he started for Mr. E. Stockwell's, of Bolton, knowing full well that he was not able to go, but feeling that he must. Fearing that trouble might be in store for him, he took a young man with him to drive. When somewhat near the home of Mr. Stockwell, he complained of being dizzy and got out of the sleigh. The trouble rapidly increased, and almost immediately he became unconscious and fell. With the assistance of some woodchoppers near by he was taken to the house of Mr. Andrew Cox, remaining there in an unconscious state until relieved by death the following afternoon.

Dr. Janes, having been summoned at once, gave all attention that could have been given. Thus, as I said before, he died while yet in the harness, struggling to do what to him seemed duty. He left a widow and twin sons, Mr. C. E. Green of Essex, Vt., and Mr. F. A. Green, residing near Rutland, Vt. He was a highly valued member of "North Star Lodge," No. 12, F. and A. M., and was buried with Masonic

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honors from the Congregational Church, Wednesday, February 10, 1886. Seldom, if ever, have I seen this church so thoroughly filled with *sincere* mourners as assembled that day to pay their last respects to the physician who had so endeared himself to them.

OBITUARY OF A. DANA DYER.

The subject of this sketch, the late Anderson Dana Dyer, A. M., M. D., a young man of genial disposition, conspicuous ability and great promise, was the youngest son of Dr. Olin G. Dyer, a resident practitioner of Brandon of many years' standing, and a lineal descendant of the Olin family, which gave to this State one of her early governors, and also furnished to the District of Columbia one of her Justices of the Supreme Court.

Young Dyer first saw the light of day in the house of his father in Brandon, January 3, 1859, and was named after the late Hon. Anderson G. Dana, A. M., M. D., a former distinguished and honored member of this Society, and a practitioner of Brandon, with whom his father for a time had been associated in practice; and who was also a man remarkable alike for his learning and skill, as he was for the diversity of his gifts and great versatility.

The early days of young Dyer were spent at home attending school with as great regularity and punctuality as the majority of boys are accustomed to do in country schools, especially if of as buoyant and sunny a nature as he was. These days were uneventful and marked by no special precocity, save that he was naturally keen, quick-witted and active. At the age of eleven years an unfortunate incident occurred that, for obvious reasons, had a marked and controlling influence on his subsequent life. This was the supervention, while playing with his fellow-mates one day, of a serious injury to his right eye, whereby its sight was hopelessly destroyed, and which handicapped him in a measure in the race for school honors and its accompanying prizes. The nature of the injury and the character of the pathological condition that supervened, were such as to make it incumbent upon him ever afterward, to exercise the greatest care and circumspection, lest overwork, and more especially night work and study, should induce sympathetic irritation and possible loss of the remaining sound eye; and yet, its condition was such that every prominent and distin-

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guished oculist who was consulted—and they were many—agreed unanimously in opposing any operative interference with it. This incident in his life is related not for the purpose of giving it special prominence, but to indicate merely a reason *why* a young man of great native ability and brilliancy, was held back by his friends from seeking, as many of the young then did, and now do, the fictitious and fallacious honor prizes of our schools and colleges, and why one of such versatility should fail to become one of the so-called honor men of his class.

The effect, however, of what study he did indulge in,—and it is here not intended in any sense to intimate that he failed to do justice to himself or to his studies,—was to develop myopic astigmatism in his only eye to such a marked degree as to necessitate the use of a glass especially constructed for his use, and which was also a source of great inconvenience and annoyance to him.

Those of you who, either by reading or from observation, are fully acquainted with the pernicious effects of continuous and protracted study—six hours a day in ill-ventilated, badly lighted school rooms, such as exist at present within the limits of this State—upon the organs of vision during the developing period of childhood and adolescence, can readily appreciate some of the difficulties and dangers this young man was obliged to encounter in seeking a liberal education. In view of this fact, it is to his great credit, may it be well said, that, without advice or suggestion from his father, or from any of his friends and acquaintances, he concluded after careful deliberation, and thoroughly considering all sides of the question, to pursue a collegiate course of study, and thereafter to enter upon the study of medicine with the view of connecting himself with the same profession which his father has so long, and with such conspicuous ability, ably adorned.

Until his entrance into college he was under the care and instruction of Mr. J. S. Cilley, one of our veteran and foremost teachers, and who for many years was the Principal of the Brandon Graded School. In recording his impressions of young Dyer during the period of which I speak, he says:—"In September, 1868, I first knew Dana Dyer as a pupil in the First Intermediate Department of the Brandon Graded School, of which I had just become Principal. Dana was then a bright, active boy, some ten years of age. His activity, his comely face and bright eyes at once attracted my attention, and I soon came to regard him as a boy of very bright promise. He remained at school steadily, passing from one grade to another with credit always, till he came to the High School, where he was mainly under my own instruction. I found him a ready scholar, quick of apprehension, and of sound judgment in all things pertaining to his studies. He held high rank in his

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class and was always respectful and manly in his intercourse with me as his teacher. He graduated from the High School, June 16, 1876, and at once entered the University of Vermont, where, as in all his subsequent career, he fully justified the high hopes which his earlier youth had promised his teachers and friends."

Mr. Cilley furthermore adds:—"I shall always remember Dana Dyer as a bright, active, kind-hearted and affectionate boy, and as a noble, talented and cultured young man, while I mourn most deeply his sudden and early death."

Young Dyer, as already intimated, entered the University of Vermont during the summer of 1876, and pursued the so-called classical or academic course of study for four full years, to the satisfaction of his instructors and with great credit to himself. His genial, open-hearted, frank, manly ways made him a great favorite with all, and especially among those with whom he daily came in contact, while his humor, which was irresistible of its kind and always contagious, and his bright, piquant sayings, so sparkling and yet so softened by such a delicacy of feeling and gentleness of manner, caused him to be, by common consent, the most popular man amidst all his college-mates. Four years of college life accomplished for him what it ought in every young man who aims to make the most he can out of all such opportunities. It unfolded, enlarged and developed him to a remarkable degree. It gave him greater breadth of view and more catholicity of feeling; it strengthened his judgment, refined his mind and cultivated his soul, and besides, opened up unto him a world whose horizon had but just came into view, filled with greater possibilities and brighter promises, while it enabled him to foster and improve those natural characteristics of heart and mind, that made him at once a charming companion and a choice friend, as well as a representative man among his kind. Had his life been spared, it is not too boastful, I think, to say, that he would have as readily and easily assumed the same position among his professional associates. In fact, the large patronage he acquired and the strong friends he made in his various fields of labor, within the short period, about three years, during which he was connected with the profession in its active relations, and the deep, universal sorrow expressed by all classes of people at his sad loss and untimely death, amply testifies to the correctness of the assertion here made.

During his college days, the taste for music, for which he was exceedingly fond, and especially for singing, which was his great delight and a source of unalloyed pleasure to him, was cultivated to a considerable extent. He had an exceptionally fine baritone voice, of great compass and power, and unusually sympathetic and flexible. A leading

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teacher of singing in one of our prominent cities, a most competent judge, said of him when young Dyer called upon him one day, after graduation, for the purpose of determining the quality and range of his voice, (the question having come up in his own mind whether he should follow medicine or music for a profession,) "that he had a magnificent voice and one that would, under proper cultivation and training, make him distinguished, and equal to any of the leading baritones of the day;" but he wisely added: "The question of your choosing music, and more particularly singing, as a means of gaining your living, you alone must decide; there are too many questions involved. Don't ask me or any one to decide for you. Decide for yourself;" and he did, and wisely too.

In June, 1880, he graduated from the University with credit to himself, fully justifying the confidence and high hopes of his instructors and friends, and immediately thereafter commenced the study of medicine under his father's personal supervision. His lectures he attended at the Bellevue Hospital Medical College in New York. Here he spent three full years, or their equivalent, attending three full courses of lectures, besides giving a definite proportion of his time to special and clinical work, and graduated in 1883. He failed to contend for any of the hospital appointments of that city, because the position of Assistant Physician in the Adams Nervine Asylum, Jamaica Plain, Boston, had been offered him by Dr. F. W. Page, who at that time had medical and executive charge. This was an excellent opportunity for him, as it gave him exceptional facilities for the study and observation of obscure and anomalous forms of nervous disease, and also brought him into more or less relation with the insane. His close proximity to the city also afforded him facilities for further clinical study, of which he speedily availed himself. Here he remained one year, and only relinquished his position for what at that time seemed a most flattering partnership in the far West, Denver, Colorado, to which place he went in August, 1884.

While in the Adams Asylum, by his engaging, gentlemanly ways, his equanimity, correct judgment and great kindness of heart, he became an especial favorite. The position at best was a most trying one to fill, and especially for one who had had no more experience than he, among such invalids as were there found. The unreasonable exactions and the impatient, peremptory demands made upon his time; the cross, peevish, fault-finding ways of, and the petty tyrannies attempted and sometimes exercised by, the patients,—necessitated the soundest judgment, and the greatest patience and gentleness to successfully cope with them, if one would avoid conflict of opinion and desired, as well, to effect a cure; and that too, oftentimes, in the face

of and in direct opposition to a patient's own determination not to get well. His resignation was a source of deep regret to all, for he had endeared himself to employes, as well as to patients and their friends. Even those who had tried his patience most, and had criticised and annoyed him on principle, sorrowfully regretted his departure. His residence in the Asylum was characterized by great honesty of purpose, by faithfulness and rigid adherence to duty, as he conceived it to be, and by a comprehensive knowledge of what was proper and right under given circumstances,—as remarkable as it was rare in one of his years and limited experience. He remained a little more than a year in Denver; a part of his stay in co-partnership with one of the leading practitioners of that city, the other part by himself alone.

He was meeting with that degree of success his knowledge, ability and agreeable manners fully justified, when he was stricken down with what is denominated there as "mountain fever," which was typhoid fever, as influenced and modified by malaria, and the high altitude of the locality. During the earlier part of his residence in that section of the country, he experienced the usual discomforts of new-comers. He had a frequent pulse, persistent headache and occasional epistaxis. What influence this may have had upon his physical well-being, it is impossible to determine. It doubtless had some. The full particulars, and the desperate nature of his illness, were never known until his convalesence became sufficiently established to enable him to return to the house of his father in October, 1885, when it became apparent that he had passed through a most dangerous and critical illness, barely escaping with his life. His return home and the effect of change, together with the invigorating influences of country air, and a good home diet, became speedily apparent in a rapid restoration to health and the development of what seemed to be a robust constitution.

Upon the suggestion of his father, who desired some relief from the burdens of an extensive ride, and on the offer of a co-partnership in the practice of their profession, he remained in Brandon, and on complete recovery at once entered upon active work. By his skill and devotion to his patients, and attention to his duty where'er it called him, he speedily acquired an extended ride, while his success was as flattering as it was deserving and comforting to an ambitious young man. During the latter part of the winter, despite his hard work and close attention to business, it was noticed that he had gained in weight very rapidly, and was less elastic in all his movements, a condition quite opposite to his natural habit and activity of mind and body, although he seemed and appeared otherwise well, save an occasional headache usually attributed to error in diet. The day preceding his sudden death, which was as sad as it was unforseen, he was apparently in as

good health as he had been, while the evening was spent in a social way, visiting acquaintances and friends. It is stated by those who were with him that he was unusually bright, witty and entertaining. On his way home about eleven P. M., in company with one of his friends, who also was an acquaintance and champion of his boyhood, it is related, that, as the topic of conversation was the deceit oftentimes practiced upon mothers by their sons, he said—and as it was so characteristic of him, I may be pardoned for relating it here—for be it truly said it is to the highest credit of the young man that he entertained such a deep, loving, honest, trustful and filial regard for his mother—that, "no matter what wrong-doing I may have done, and it was never very discreditable, if she ever inquired about the matter I never lied to her: I always told the truth." Comment is unnecessary. The language speaks volumes for itself.

The following day, Sunday, April 11, 1886, he died, and the incidents connected therewith are inexpressibly sad. In the early morning, about 6 A. M., the door bell rang, and the summons was met by Dr. Dyer, Senior, who, on finding it to be a call for the junior physician, and arranging for its appointment after breakfast, turned about, and as he did so, he noticed his son standing in the door leading into the dining room through which he was to pass. As he passed along, young Dyer said to him, "Father, what is it?" And on its satisfactory explanation, added: "I'm glad father; I have a little headache this morning," and immediately entered his own room, near by. These words were uttered in his customary mild, gentle way of speaking, and naturally excited no suspicion that anything was wrong, or of what was soon so suddenly to transpire. An hour later, when his mother went to his room to awaken him, as had been her custom since his return from the far West, for he was a sound sleeper, she noticed that he failed to respond. She then went into the room, and on going up to his bedside placed both hands on each side of his face and gently rolling his head, said, "Dana, wake up." Again he was silent; then it was that she saw by his countenance and the character of his breathing that something was wrong, and immediately screamed to her husband, who on arriving, at once discovered the true state of affairs. His son was comatose. Medical assistance was promptly summoned, but it was of no avail. He remained in deep coma, from probable extensive extravasation into the "pons," and quietly and peacefully passed away at 3 o'clock in the afternoon; the high hopes of indulgent parents blasted, and the noble aspirations of an ambitious and able young man, suddenly terminated in the morning of his career.

Such, gentlemen, are the facts and incidents connected with the life and death of young Dr. Dana Dyer. He was at the threshold of his

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profession, it is true, but he was full of high hopes and noble aspirations; in deep love with his work and profession, thorough, honest, upright, kind-hearted, and so impressed with its duties and responsibilities, that in every relation, with his own as well as with his father's patrons and friends, and with all the people with whom he came in daily contact, he so impressed them with his manliness and true nobility of character that his untimely loss was mourned with universal sorrow. The people of his town with one accord felt that there had gone out from their midst a young man of rare promise, and one whose place it would be difficult to fill. As a physician they recognized in him a man of sound judgment, great skill, and one thoroughly versed in his profession as a science and noble art.

His opportunities had been excellent, and he was therefore fully equipped to meet and bear the burdens, sicknesses and sorrows of suffering humanity. The confidence reposed in him was great, and appears not to have been misplaced.

Your own confidence in him was manifested in nominating him to the position of Councilor, when he had but just become a member of this Society, a position demanding extensive knowledge and experience in dealing with men and their affairs.

Dr. Dyer stood six feet less one inch in his stocking feet, and was a man of unusually fine physique. His comely, open, genial face, marred by the effects of no dissipation, was pleasant to look upon, and his loss is to be deeply deplored. Such men as he was, and bade fair to be, are needed in this Society to uphold and maintain its honor and integrity, and to enlarge its sphere for public good. Why such young men are cut down in the flower of their youth, with a useful and brilliant future awaiting them, is indeed a mystery. In the light of what he was and what he promised, his loss, to us seems great and well nigh irreparable.

In Memoriam.

EPHRAIM BARKER, LONDONDERRY.

Born in Chester, Vt., August 15, 1820; graduated at Castleton, 1847; admitted October, 1864; died in Londonderry, July 26, 1875.

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CONSTITUTION AND BY-LAWS

OF THE

Vermont State Medical Society.

(As revised October, 1887.)

CONSTITUTION.

ARTICLE I.—NAME.

This Society shall be called the Vermont State Medical Society.

ARTICLE II.—OFFICERS.

The officers of this Society shall be a President, Vice-President, Secretary, Treasurer, Auditor, Publication Committee of three members, Executive Committee of three members, of which the Secretary shall be one *ex-officio*, Board of Councilors, consisting of one from each county, and a Board of License Censors, consisting of three members, all of whom shall be elected annually at the opening of the second day's session, by ballot when demanded by any member present, or in such other manner as the Society shall direct, and shall hold their respective offices until the close of the next annual meeting, and until others are chosen.

ARTICLE III.—MEETINGS.

There shall be an annual meeting of this Society, held in Montpelier on the first Thursday and Friday after the second Wednesday in October, and a semi-annual meeting at such place as the Society shall direct, on the last Thursday and Friday in June.

ARTICLE IV.—MEMBERSHIP.

Any physician residing within the State, who is a graduate of a regular recognized Medical School, may become a member of this Society

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at any regular meeting, upon recommendation of the Board of Councilors and vote of the Society, by signing the Constitution and paying the sum of two dollars to the Treasurer.

ARTICLE V.—Discipline.

Any member of this Society guilty of intoxication, unprofessional or irregular practice, or of gross immorality, or for other good reason, may be expelled or suspended from the Society by a vote of two-thirds of the members present at any annual meeting.

ARTICLE VI.

This Constitution may be repealed, altered or amended at any annual meeting, by a vote of two-thirds of the members present, provided such repeal, alteration or amendment be proposed at a previous annual meeting, and notification be given by the Secretary, by a notice printed upon the programme of the annual meeting at which such repeal, alteration or amendment will come up for action.

ARTICLE VII.

This Society may adopt such By-Laws, not repugnant to this Constitution, and may repeal, alter or amend the same, in such manner as a majority at any annual meeting may deem proper.

BY-LAWS.

ARTICLE I.—Duties of Officers.

Sec. 1. The President shall preside at all meetings and perform all the duties incident to such office. He shall deliver or cause to be read an address or dissertation on some medical subject at the annual meeting at which he presides.

Sec. 2. The Vice-President shall preside in the absence of the President, and perform all his duties and possess all his privileges. He shall deliver or cause to be read, an address, on the evening of the first day of the semi-annual meeting.

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SEC. 3. The Secretary shall keep a record of the proceedings of the Society, and of the members present at each meeting; shall arrange and publish the programme at least two weeks before each meeting; shall conduct the correspondence; and shall have his necessary expenses defrayed from the funds of the Society. He shall, if unable to attend the meeting of the Society personally, send the Records to some member in attendance.

SEC. 4. The Treasurer shall collect and disburse all moneys of the Society, agreeably to their directions, and make report of his doings to the Society at its annual meeting.

SEC. 5. The Auditor shall examine and verify the accounts of the various officers.

SEC. 6. The Executive Committee shall make selection of a subject or subjects for the programme for the next ensuing meeting; shall make assignments of the parts to any of the members, as in their judgment they think advisable, and report the same to this meeting and to each and every subsequent meeting.

They shall make such other arrangements for the meetings of the Society as they shall deem essential for its best interests.

They shall select the place and time of holding the semi-annual meeting, and shall report the same to the Society at the annual meeting.

SEC. 7. The Publication Committee shall receive all papers referred to them by the Society, and as soon as possible subsequently to the annual meeting of the Society, shall publish such of those papers as they may deem best suited to promote the interest of the profession and the public good, under the title Transactions, and perform all other appropriate duties.

SEC. 8. The Board of Councilors shall choose its own officers and make its own regulations, providing they do not conflict with the Constitution and By-Laws of this Society.

There shall be a meeting of said Board on the first day of the annual and semi-annual meetings, and at such other time as the Board shall determine.

The duties of said Board shall be to examine the credentials and qualifiations, with reference to their methods of practice, etc., of persons desirous of becoming members of the Society, and present at each meeting the names of such as, in their opinion, are eligible to membership under the Constitution and Regulations of the Society, and to report the names of members deceased, if any, and recommend such action in each case as they may deem best. The Councilors shall rec-

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ommend for membership, only such physicians as shall present to them their diplomas, or a certificate in writing signed by some member of this Society in good standing, stating that he has personal knowledge of said applicant having a diploma of a regular medical school.

SEC. 9. It shall be the duty of the Board of License Censors to issue license certificates to regular physicians wishing to practice medicine in this State, in accordance with the State law regulating such practice.

ARTICLE II.—DUES.

SEC. 1. Every member of this Society (honorary excepted) shall pay to the Treasurer an annual fee of two dollars.

SEC. 2. Any member who shall fail to pay his dues for a period of three years, shall be dropped from the Society, and his name stricken from the roll of membership, and he shall be so notified by the Secretary.

SEC. 3. Any member who has been dropped from the Society for non-payment of dues, may be re-elected after any number of years by a vote of three-fourths of the members present at any regular meeting upon payment of the three years' arrearages.

ARTICLE III.—HONORARY MEMBERS.

The Society may elect at each annual meeting, not more than four honorary members, non-residents of the State, who shall have the same privileges as ordinary members, except that they shall not be eligible to office, nor have the right to vote.

ARTICLE IV.—DELEGATES.

Delegates shall be appointed annually to represent this Society in the American Medical Association; the Medical Department of the University of Vermont and of Dartmouth College at the examination of candidates for graduation, when duly notified; the Connecticut River Valley Medical Society; the White Mountain Medical Association; the White River Valley Medical Association; the Northern New York Medical Association; the State Medical Societies of the New England States, together with those of New York, and such other States and societies as the mutual interests of the societies may direct.

In cases where delegates are unable to attend to the duties of their appointment, it shall be their duty to notify the Secretary of such inability, and the Secretary and President shall appoint others to supply their places.

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ARTICLE V.

Every member who is appointed to prepare a paper for any meeting, shall, at least thirty days before such meeting, furnish to the Secretary a short abstract of the same, which abstract, or an epitome of which, the Secretary shall cause to be printed in the programme following the announcement of the paper.

ARTICLE VI.

Any member wishing to withdraw from the Society shall be permitted to do so on his written request after he shall have presented the Treasurer's receipt for all moneys due.

ARTICLE VII.

The Constitution and By-Laws, together with the names and residences of members in good standing, shall be published in every volume of the Transactions.

ARTICLE VIII.

The names of deceased members of the Society, with the dates of birth, graduation, admission to membership, death and such other items in brief, of personal history, as may seem desirable to the Committee on Publication, shall be printed in each copy of the Transactions under the caption, "In Memoriam."

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TRANSACTIONS

OF THE

VERMONT

STATE MEDICAL SOCIETY

FOR THE YEAR 1888.

BOSTON MEDICAL
FEB 25 1889
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PUBLISHED BY THE SOCIETY.

ANNUAL MEETING THE FIRST THURSDAY AND FRIDAY AFTER THE SECOND WEDNESDAY IN OCTOBER, AND THE SEMI-ANNUAL MEETING THE LAST THURSDAY AND FRIDAY IN JUNE, AT SUCH PLACE AS DIRECTED AT THE PRECEDING ANNUAL MEETING.

MONTPELIER, VT.:
ARGUS AND PATRIOT BOOK AND JOB PRINTING HOUSE.
1889.

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FOR THE YEAR 1888.

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NOTE.—Each article published herein stands upon its own merits, as the expression of its Author's opinion, for which the society does not hold itself responsible.

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TRANSACTIONS

OF THE

Vermont State Medical Society,

1888.

SEMI-ANNUAL MEETING.

The Vermont State Medical Society convened in semi-annual session at the Welden House, St. Albans, on June 28 and 29.

The meeting was called to order by the President, Dr. Edw. R. Campbell, of Bellows Falls. Prayer was offered by Rev. L. O. Sherburne, of St. Albans.

The records of the last meeting were read, and approved as read.

On account of the serious illness of the wife of the Secretary, Dr. D. C. Hawley, of Burlington, he was not able to be present, and Dr. Joel Allen, of Johnson, was elected Secretary pro tempore.

The following gentlemen were elected to membership in the Society:—

A. DAVID, Burlington,	Laval University, '85.
A. A. LATOURNEAU, Burlington,	Victoria College, '87.
J. F. EMERY ALLARD, Winooski,	Bellevue, '65. McGill, '66.
E. O. CROSSMAN, Burlington,	U. V. M., '87.
O. G. STICKNEY, Georgia,	U. V. M., '84.
E. A. GATES, Highgate,	U. V. M., '77.
R. M. KINCAID, Highgate,	McGill, '88.
F. D. ROBERTSON, St. Albans,	Lecentiate Royal College, P. and S., Edinburg. Lecentiate Faculty, P. and S., Glasgow.

An obituary of O. F. Fassett, M. D., of St. Albans, was read by Dr. S. S. Clark.

Dr. J. N. Jenne, of St. Albans, read a paper on "Shock after Surgical Operations and Injuries."

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The subject was discussed by Dr. C. F. Branch, of Newport.

Adjourned to 2 o'clock, P. M.

AFTERNOON SESSION.

Meeting opened by the President at the appointed time.

Prof. A. F. A. King, of Washington, D. C., read a valuable paper on "Puerperal Convulsions," in which he discussed the cause and explanation of Puerperal Albuminuria.

The subject was discussed by A. P. Grinnell, J. M. Clark and Henry Boynton.

A report of the Board of Censors was called for and given by F. H. Cilley, of Jericho, the only member present, in regard to one L. E. Dionne, to whom a former board had granted a license upon the representation that he was a graduate of the College of P. and S. of the Province of Quebec.

Upon knowledge coming to the present board that said Dionne was not a graduate of any college, and that he came into possession of his license by fraud, the board revoked his license according to law.

Dionne appeals from the Board of Censors, to the society.

The Society voted that the two dollars which had been paid by Dionne to become a member of this society, be returned to him, and that the Board of Censors be sustained by the society.

A paper prepared by Dr. J. S. Richmond, on Hydrocephalus, was read by the Secretary, as the writer was not present.

Dr. F. R. Stoddard reported two cases of Albuminuria occurring in brothers aged two and four years. Both cases were marked and severe and both recovered.

The subject was further discussed by Dr. A. P. Grinnell, who saw the cases in consultation, and by Drs. D. F. Rugg and J. H. Woodward.

A paper was read by Dr. F. H. Cilley, on "Acute Bright's Disease."

Adjourned to 8 o'clock.

EVENING SESSION.

A very interesting paper was read by Dr. F. W. Goodall, of Bennington, on "Acute Chorea."

Discussed by Drs. Stoddard, Geo. Dunsmore and S. S. Clark.

At nine o'clock the society adjourned to repair to the residence of Dr. S. S. Clark, where a reception was given the society by Dr. and Mrs. Clark.

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SECOND DAY, FRIDAY, JUNE 29.

The society convened at nine o'clock.

A paper was read by Dr. Stoddard, on "Megrim."

Discussed by Drs. C. F. Branch, Joel Allen, S. S. Clark, A. B. Bisbee. D. F. Rugg and F. H. Cilley.

Dr. C. J. Russell read a paper on "The Medical Treatment of Fibroid Tumors of the Uterus."

Discussed by Drs. C. F. Branch, F. H. Cilley, J. N. Jenne and Geo. Dunsmore.

The programme for the next meeting was read as follows:—

Obituary of S. Putnam, M. D., by Dr. J. Draper.

Obituary of L. C. Butler, M. D., by F. H. Cilley.

Obituary of F. S. Morse, M. D., by D. F. Rugg.

Obituary of Samuel Nichols, M. D., by Daniel Campbell.

Obituary of H. P. Hall, M. D., by J. N. Jenne.

Papers by Geo. Dunsmore, D. F. Rugg, A. P. Grinnell, A. B. Bisbee, A. C. Bailey. Henry Boynton, C. F. Branch, J. H. Hamilton, O. W. Sherwin, C. S. Caverly, L. M. Bingham.

ATTENDANCE.

Drs. E. R. CAMPBELL,	Bellows Falls.
JOEL ALLEN,	Johnson.
S. S. CLARK,	St. Albans.
J. N. JENNE,	St. Albans.
GEO. DUNSMORE,	St. Albans.
H. D. BELDEN,	St. Albans.
RALPH SHERWOOD,	St. Albans.
F. D. ROBERTSON,	St. Albans.
S. W. PAIGE,	St. Albans.
D. G. KEMP,	Montpelier.
A. B. BISBEE,	Montpelier.
B. W. DAVIS,	Montgomery.
W. W. HUTCHINSON,	Enosburgh.
W. R. HUTCHINSON,	Enosburgh.
A. C. BAILEY,	W. Randolph.
HENRY BOYNTON,	Woodstock.
J. M. CLARKE,	Burlington.
A. P. GRINNELL,	Burlington.
H. A. CRANDALL,	Burlington.

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Drs.	J. H. WOODWARD,	Burlington.
	A. F. A. KING,	Washington, D. C.
	F. L. LADUE,	Alburgh Springs.
	F. R. STODDARD,	Shelburne.
	C. J. RUSSELL,	Hinesburgh.
	C. F. BRANCH,	Newport.
	R. M. KINCAID,	Highgate Center.
	E. A. BATES,	Highgate Center.
	E. M. BROWN,	Sheldon.
	E. S. ALBEE,	Bellows Falls.
	O. G. STICKNEY,	Georgia.
	C. F. HAWLEY,	Fairfax.
	F. H. CILLEY,	Jericho Center.
	D. F. RUGG,	Hartland.
	A. L. BINGHAM,	Williston.
	HENRY BAXTER,	Highgate.
	F. W. COMINGS,	Enosburgh Falls.
	J. P. HINKLEY,	Dakota Territory.

Adjourned,

JOEL ALLEN, SEC. PRO. TEMPORE.

ANNUAL MEETING.

The Seventy-Fifth Annual Meeting of the Vermont State Medical Society was held in the new Court room, State House, Montpelier, on October 11 and 12, 1888.

FIRST DAY, OCTOBER 11.

The society was called to order at 10:30 A. M. by the President, Edw. R. Campbell, of Bellows Falls.

Prayer was offered by the Rev. George T. Raymond, of Montpelier.

The records of the semi-annual meeting were read and approved.

The Secretary read a letter from Dr. Hubbard, of New Haven, Conn., delegate from the Connecticut State Medical Society, expressing regret at his inability to be present.

The President appointed the following committee on nominations:—

GEO. DUNSMOOR, D. F. RUGG,
H. D. HOLTON, F. R. STODDARD.
C. S. CAVERLY,

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Dr. D. G. Kemp, Treasurer of the society, made his annual report, showing $238 in the treasury.

Dr. D. F. Rugg made the following report of the delegates of this society to Dartmouth Medical College:—

TO THE VERMONT MEDICAL SOCIETY,—

We, the undersigned, designated to act as your representatives at the examinations of the candidates for the degree of M. D., at the Dartmouth Medical College, would report that upon November 21st and 22d, 1887, we met at Hanover, N. H., Drs. W. S Leonard and M. H. Felt, of the New Hampshire Medical Society, and with them, examined, orally, twenty-nine students who had previously passed a written examination by the faculty. Twenty-six of these gentlemen met with our approval and received their degree. The majority of the successful candidates seemed to be well qualified to practice their chosen profession, and gave evidence of having received thorough training. The New Hampshire Medical Society elect senior and junior delegates, The junior delegate of one year is expected to be the senior delegate the next year. We suggest the adoption of the same plan by this Society.

We wish to bear witness to the pleasure experienced in meeting the able delegates from New Hampshire, and to the great courtesy and kindness shown us by the members of the faculty who were present,

D. F. RUGG, M. D., } Delegates from Ver-
F. H. CILLEY, M. D., } mont Medical Society.

Dr. F. H. Cilley, of Jericho, read an obituary of L. C. Butler, M. D., of Essex.

An obituary of Samuel Nichols, M. D., of Bellows Falls, by Daniel Campbell, M. D., of Saxtons River, was read by the Secretary.

Dr. Wm. R. White, of Providence, delegate from the R. I. Medical Society, presented his credentials and was introduced to the society by the President.

Dr. White in a brief speech presented the congratulations and good wishes of that society.

Dr. C. J. Allen, of Waitsfield, read his paper on "Acute Yellow Atrophy of the Liver."

It was discussed by Drs. Goodall, Sherwin and Wm. R. White, of Providence, R. I.

Dr. A. B. Bisbee, of Montpelier, presented a paper on "Albuminuria," which was discussed by Drs. Holton, Sherwin, Caverly, Goodall, Nimblet, Perry, C. J. Allen, Upham and C. P. Frost, of Hanover, N. H.

Adjourned to 1:30 P. M.

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AFTERNOON SESSION.

Met at 2 P. M.

The following gentlemen were elected members of the society:—

E. K. Baxter, Sharon, Dartmouth.

A. V. Goss, W. Randolph, U. V. M., '86.

C. W. Jacobs, Richmond, U. V. M., '84.

I. P. Dana, South Royalton.

Fred L. Brigham, Pittsfield, Dartmouth, '87.

Thos. A. Cootey, Mt. Holly, U. V. M.

Dr. George Dunsmore presented a valuable paper on "Sepsis in Obstetrics."

The subject was discussed by Drs. Wilder, Frost, Upham and Wm. R. White.

Dr. C. S. Caverly, of Rutland, presented a paper on "The present status of the Germ Theory," and Dr. O. W. Sherwin "The localization of Function in the Brain."

At 4:30 P. M. the society adjourned to the Hall of Representatives, where the President, Dr. Edw. R. Campbell, delivered his annual address, which was listened to by a large number of the members of both branches of the Legislature.

Adjourned.

EVENING SESSION.

Met at 7:30 P. M.

The following report of delegates to the U. V. M. was presented:—

MR. PRESIDENT AND MEMBERS OF THE VERMONT MEDICAL SOCIETY:

We, as delegates from this Society, received due notice of the examination of candidates for the degree of M. D. from the University of Vermont. The time required for these examinations was nearly a week; two days of said time we spent in listening to the oral examinations, and asking such questions as we desired, and examining the written work, and the markings by the professors. The result was sufficient to convince us that the students were well taught, and that the examinations were thorough and impartial, so much so, that several applicants failed to get a sufficient number of votes to receive a diploma.

To illustrate, Professor Tolles' examinations in anatomy occupied fifty-six hours, in all, while his course of lectures upon this subject only occupied thirty-six hours. His plan was to receive his applicant for examination in the anatomical room, cadaver and specimens upon the table, and have him proceed to point out many of the essential parts, giving the name, origin and insertion, relative position and relation of each, thus testing his actual knowledge aside from mere memorizing.

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Also Professor King's examinations were of a similar character. The student was required to apply forceps upon the manikin for the various presentations in difficult labor, and give the treatment most approved for puerperal diseases.

We also were present at some of Professor Grinnell's examinations, in which we participated, and saw his markings of the written work; and while his questions were not abstruse they were very practical and required a good knowledge of theory and practice to be able to answer correctly, and such as did so we think would be able to acquit themselves as reputable practitioners.

The other professors had left, but we had an opportunity to examine their written questions and answers with their markings. The questions were, many of them, abstruse, and required a thorough knowledge of the subject to answer them correctly. Some of the applicants fell short and were rejected. Many of them, however, passed a creditable examination.

Upon the whole, your delegates are of the opinion that this college is teaching more thoroughly than formerly, and that the requirements for graduation are greater and more extensive than when we served you in this capacity a few years since. The facilities for clinical practice, since the erection of the Mary Fletcher hospital, together with a good museum, offer a good opportunity for students, we think equal to any college in the country.

S. S. CLARK, M. D., } Delegates from Ver-
F. L. LADUE, M. D., } mont Medical Society.

Dr. Cilley read the report of Board of License Censors:—

REPORT OF THE BOARD OF CENSORS.

The Board of Censors, for the year just closed, beg to submit the following report:—

Licenses have been granted to the following named gentlemen:—

M. R. CRAIN,	Rutland.
C. J. RUSSELL,	Hinesburgh.
O. J. GILCHRIST,	Rutland.
A. KENNE.	West Rutland.
C. C. PERRY.	Bethel.
O. W. DALEY,	White River Junction.
DR. DAY,	Barnard.
W. W. STILES.	Essex.
C. E. CHANDLER,	Montpelier.
GEO. B. NICHOLS,	Barre.
W. G. E. FLANDERS,	Fairfield.
E. T. DAVIS,	Montgomery.
EDWARD PILON,	Vergennes.
W. R. MURROW, (for one year),	Colchester.

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R. MARR KINCAID	Highgate.
EMERY ALLARD,	Winooski,
F. D. ROBERTSON,	St. Albans.
A. A. LETOURNEAU,	Burlington.
F. C. KINNEY,	Greensboro.
I. P. DANA,	South Royalton.

Complaint was made to the Board that one L. E. Dionne, of Burlington, had obtained a license on his statement to a former Board that he had a diploma, when the fact was he had none. The case was fully investigated, and we became satisfied that he was not a graduate of any medical school, and that he had but very little knowledge of medicine. On the ground that he had obtained his license by false representation, we decided that it was our duty to revoke it, which we did. Of course Mr. Dionne was not pleased with the action of the Board and employed legal counsel, who tried to frighten us and wanted we should reconsider our action, but we were not disposed to do so, and stood our ground, but Mr. Dionne continued to practice until legal proceedings were instituted against him. I was summoned to Burlington to testify in the case, which went against the gentleman, and he has finally left the State. The case came very near getting into the Courts. Had that been the result I fear some things might have come to the light that would have been no credit to our Society, on account of the loose way in which licenses have been granted in some cases at least. We would, therefore, recommend that the Board of Censors be composed of our best members, and that no one be licensed to practice the healing art unless they are well qualified and have a diploma from some regular medical college in good standing.

Fraternally submitted,

S. H. GRISWOLD.
C. C. PERRY,
F. H. CILLEY,
} Censors.

The following papers were presented:—

"The Anatomy, Physiology and Therapeutics of the Pharynx," by A. C. Bailey, of W. Randolph.

"Hysteria," by Henry Boynton, of Woodstock.

"Diphtheria; its history, cause and prevention," by J. H. Hamilton, of Richford.

Obituary of Sumner Putnam, M. D., of Montpelier, by Joseph Draper, of Brattleboro.

Adjourned to 9 A. M.

SECOND DAY, OCTOBER 12.

Met at 9 A. M.

Called to order by President.

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OFFICERS ELECTED.

President, J. M. CLARKE, . . . Burlington.
Vice-President, F. W. GOODALL, . . . Bennington.
Secretary, D. C. HAWLEY, ... Burlington.
Treasurer, D. G. KEMP, ... Montpelier.
Auditor, C. E. CHANDLER, ... Montpelier.

EXECUTIVE COMMITTEE.—J. M. Clarke, D. C. Hawley, F. R. Stoddard.

PUBLICATION COMMITTEE.—A. B. Bisbee, D. G. Kemp, C. M. Chandler.

LICENSE CENSORS.—C. S. Caverly, J. D. Brewster, J. N. Jenne.

COUNCILLORS.

W. H. VINCENT, . . .	Addison	County.
LYMAN ROGERS, . . .	Bennington	"
S. T. BROOKS, ...	Caledonia	"
H. C. TINKHAM, . . .	Chittenden	"
R. T. JOHNSON, . . .	Essex	"
RALPH SHERWOOD, . . .	Franklin	"
F. L. LADUE, ...	Grand Isle	"
E. J. HALL, ...	Lamoille	"
H. H. LEE, ...	Orange	"
C. F. BRANCH, . . .	Orleans	"
C. W. PECK, ...	Rutland	"
C. J. ALLEN, . . .	Washington	"
E. S. ALBEE, ...	Windham	"
HENRY BOYNTON, . . .	Windsor	"

DELEGATES.

American Medical Association.—G. B. Bullard, F. R. Stoddard, A. P. Grinnell, L. M. Bingham, J. H. Woodward, R. T. Johnson, S. S. Clark, Geo. Dunsmore, H. R. Wilder, Joel Allen, C. L. Erwin, C. S. Caverly, S. H. Griswold, M. R. Crain, Henry Janes, D. G. Kemp, J. H. Jackson, D. Johnson, Jr., H. D. Holton, E. R. Campbell, O. W. Sherwin, D. F. Rugg, J. S. Richmond.

Maine Medical Association.—O. W. Daley, O. W Sherwin.

New Hampshire Medical Association.—C. J. Allen, Dean Richmond,

Rhode Island Medical Association.—S. L. Wiswell, J. C. Rutherford.

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Connecticut Medical Association.—John M. Clark, C. E. Chandler.

New York Medical Association.—F. W. Goodall, Lyman Rogers.

Connecticut River Valley Medical Association.—B. J. Andrews, C. J. Russell.

White River Valley Medical Association.—John Winch, C. F. Camp.

Dartmouth Medical College.—Senior Delegate, F. H. Cilley; Junior Delegate, A. C. Bailey.

Medical Department U. V. M.—Joel Allen, A. L. Bingham.

The following resolution in amendment of the constitution and by-laws was adopted:—

Resolved. That the annual meeting in the off year of the Legislature be held in Burlington.

The following papers were presented:—

"Cerebro-Spinal Menengitis," by F. T. Kidder, M. D., of Woodstock.

"A report of a case of Tait's Operation for removal of the Ovaries," by L. M. Bingham, M. D., of Burlington.

Obituary of F. S. Morse, M. D., by Dr. D. F. Rugg, of Hartland.

The Executive Committee made the following report:—

The semi-annual meeting in 1889 will be held in Brattleboro.

PROGRAMME.

Obituary of H. F. Crain, by S. H. Griswold.
Solomon Brush, by C. F. Hawley.
M. Goldsmith, by C. S. Caverly.

Papers by Drs.	S. L. Wiswell,	Drs. C. L. Allen,
	H. D. Holton,	P. P. White,
	E. S. Albee,	E. S. Munger,
	C. W. Peck,	O. W. Phelps,
	J. Draper,	J. S. Richmond,
	D. C. Hawley,	E. H. Pettingill.
	J. N. Jenne,	

D. C. HAWLEY,
E. R. CAMPBELL,
S. L. WISWELL,
} Ex. Committee.

ATTENDANCE.

Drs. Edw. R. Campbell, Bellows Falls.
E. S. Albee, Bellows Falls.
O. W. Sherwin, Woodstock.

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Henry Boynton, Woodstock.
F. T. Kidder, Woodstock.
E. F. Upham, W. Randolph.
A. C. Bailey, W. Randolph.
C. S. Caverly, Rutland.
A. B. Bisbee, Montpelier.
C. M. Chandler, Montpelier.
C. E. Chandler, Montpelier.
D. G. Kemp, Montpelier.
C. J. Allen, Waitsfield.
C. C. Perry, Bethel.
J. H. Winch, Northfield.
E. K. Baxter, Sharon.
E. J. Hall, Morrisville.
C. F. Hawley, Fairfax.
F. W. Goodall, Bennington.
J. M. Clarke, Burlington.
H. C. Tinkham, Burlington.
J. H. Woodward, Burlington.
Wm. B. Lund, Burlington.
D. C. Hawley, Burlington.
Geo. C. Briggs, Burlington.
J. H. Hamilton, Richford.
F. H. Cilley, Jericho Center.
D. F. Rugg, Hartland.
C. J. Russell, Hinesburg,
S. L. Wiswell, Cabot.
Geo. Davenport, Randolph.
Wm. M. Huntington, Rochester.
C. W. Brigham, Pittsfield.
Fred L. Brigham, Pittsfield.
O. W. Daley, White River Junction.
A. L. Marden, Perkinsville.
Geo. B. Nichols, Barre.
H. O. Worthen, Barre.
J. H. Jackson, Barre.
O. L. Nimblet, Monkton.
D. D. Grout, Stowe.
A. L. Bingham, Williston.
H. D. Holton, Brattleboro.

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T. Goodwillie, Vernon.
T. A. Cootey, Mt. Holly.
James Haylett, Moretown.
C. M. Ferrin, Essex.
W. H. H. Varney, Charlotte.
W. H. Giddings, Bakersfield.
Ralph Sherwood, St. Albans.
Geo. Dunsmoor, St. Albans.
S. W. Paige, St. Albans.
J. N. Jenne, St. Albans.
B. J. Andrews, Richmond.
C. F. Camp, Barre.
R. T. Johnson, West Concord.
H. H. Lee, Wells River.
Joel Allen, Johnson.
H. R. Wilder, Swanton.
Daniel Johnson, Northfield.
F. R. Stoddard, Shelburne.
W. A. Jones, Waitsfield.
C. W. Peck, Brandon.
O. D. Green, Warren.
W. H. Vincent, Orwell.
J. D. Brewster, Windsor.
C. N. Hunt, Worcester.
G. H. Gorham, Alstead, N. H.
H. T. Risdon, National City, Cal.
Wm. R. White, Delegate, Providence, R. I.
C. P. Frost, Hanover, N. H.

On motion, adjourned.

D. C. HAWLEY, M. D., Secretary.

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PRESIDENT'S ADDRESS.

EDWARD R. CAMPBELL, M. D., Bellows Falls, Vt.

Gentlemen of the Vermont State Medical Society:—

Before reading what the constitution of our Society would, perhaps, dignify by the term of a short address, I wish to return you my sincere thanks for the honor conferred in selecting me as your presiding officer for the current year. While no one can feel more keenly than myself my own incapacity to properly fill the position, I confidently appeal to your generosity in asking you to overlook my shortcomings.

In choosing subjects for brief mention to-night, I have been, in a great measure, influenced by the thought that their thorough discussion by the members present might result in some concerted action which might contribute to the general good of both the profession and the public; and nothing will suit me better than a free expression of opinion in regard to each topic mentioned.

A subject, which has in the past year or two been somewhat discussed by the profession, is "What Constitutes Irregular Practice?" and I have heard quite wide differences of opinion expressed by prominent members of our Society in the matter. For the purpose of eliciting discussion, I propose to mention some cases, and perhaps venture some opinions. For instance; a regular physician has under his care a lady patient who may have suffered from severe affection of the nervous system for years, and believes herself unable to get out of bed. Her physician thinks otherwise, and believes that if she would really exert her will power, (the acute disease having, in his opinion, disappeared,) she could leave her bed and use her legs. Firm in this opinion, and with the consent of the patient's friends, he proceeds to administer unusual treatment. The patient is a maiden lady, and the physician one who sometimes visits his patients on horse-back. At the time appointed for the visit, he rides up to the house, and with spurs on, he enters the lady's room; apparently under the influence of liquor he uses strong language and insists that, being tired, he must have the bed whether she remains or not, and commences to disrobe. Under the influence of fear, or other emotions, the patient leaps from the bed and disappears into an adjoining room, even before the doctor

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had removed any but his outer garments. The spell was broken, and the patient regained the use of her limbs, but whether she retained our friend as a family physician I do not know. Another well authenticated case where the patient had been confined to an invalid's chair for years, and was, in her own estimation, at least, wholly unable to use her lower extremities. On pleasant days she had been carried out into an adjoining field to enjoy the pleasant summer weather.

Her physician was of the opinion that it would take some most unusual stimulant to make her endeavor to regain the use of her lower limbs. He was also knowing to the fact that she was almost mortally afraid of thunder and lightning. Putting these two facts together, he directed that she should be carried out in the usual manner on some day when her friends saw the first signs of an approaching thunder storm, and that when she called to be brought in they should pretend not to hear her. An appropriate time presenting, the directions were carried out. The patient soon noticed the signs of the storm in the distance, and called to her friends to carry her into the house, but no one seemed to hear, and as the storm approached, her cries became louder and louder but no one answered. As the storm almost reached the house, what was the joy and astonishment of her waiting and anxious friends to see her rise and run nimbly into the house. The thunder storm had accomplished what other forms of electricity and other treatment had failed to do.

One other case where, at least, very unusual treatment was successfully employed by a highly-esteemed and prominent member of our Society. As I understand the case, he was called quite a distance from his home to see another member of the family; at any rate, he was but slightly, if any, acquainted with the family. It was mentioned that there was one member of the family who had not for years been able to utter an articulate sound. The doctor became interested and asked for the full history of the case, and had a long talk with the patient, and at last boldly stated that he thought he could cure the case if the patient would carefully follow out his directions. It was decided that he should make the trial. The doctor began to make cabalistic signs, and passes, and after duly impressing the patient with his apparently wonderful powers, he said, "Now repeat these sounds after me;" and lo! the boy talks!

Now it seems to me almost self-evident that had any so-called "faith cure," "Christian scientist," or any irregular traveling practioner successfully treated the above mentioned cases, their fame and wonderful "healing powers" would have been heralded through the surrounding

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country. And shall the regular physician be accused of heresy for adopting an unusual but successful plan of treatment?

In the first two cases mentioned, it was probably the unusual shock to the nervous system from strong mental emotions that aided in starting the long unused extremeties of the patients, and in the case last mentioned, powerful faith in, and the "magnetic influence" of, the "strange doctor" might have been powerful aids in restoring the patient's voice.

Another question asked within the last year or two, is whether the regular physician can, or does, practice more than one so-called "system" of medicine, and, as within the past few years, once at least, a delegate from one of our sister State's societies, that has one of the longest lists of members in the United States, referred to the regular profession as "Allopaths," it seems not inappropriate to say a few words on the subject, as the question is also frequently asked by the laity: "What school do you practice?" Dr. Cathell defines an "allopathic" physician as "one whose restricted creed would require him to substitute some other disease for the one he is called upon to treat." He also says that, "there is probably not an allopathist in the world; in fact the term itself is the invention of Samuel Hahnemann, and is both untrue and offensive." And any physician who should try to practice it would at once become an irregular. It has been truly said that medicine is a liberal profession, subject to no bonds except those of science and truth, and if at any time any new remedy is discovered, or system of cure arises, no matter how great or how humble its origin, it is our duty and privilege, if there be one grain of truth or progress in it, to utilize it in our endeavor to alleviate human suffering. In fact, our claim to practice liberal, rational medicine, is clearly laid down in, at least, the by-laws of the Massachusetts Medical Society, where I find among the qualifications for membership, the following: "That the candidate does not profess to cure diseases by, nor intend to practice spiritualism, homœopathy, allopathy, Thompsonism, eclectism, or any other irregular or exclusive system." In fact, gentlemen, we belong to no limited school of medicine, but accept that remedy which, in our judgment, is best adapted to the individual patient whom we are treating, whether it be from the mineral, animal or vegetable kingdom, or whether it was first discovered by some eminent practioner, or from the humblest of sources. In the words of another, "Let us take the honey of truth wherever we find it, and accept all truths, whether winnowed from past experience or discovered in our own days, and stand ready to receive and utilize any and every valuable discovery, no matter when or by whom made."

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In the matter of consultations, I believe we should always consider it a duty to assist in alleviating human suffering. If the practicioner in charge of the case is personally offensive to us, be he regular or irregular, we should so state the circumstances and leave the patient's friends to choose between us; but if such is not the case, I believe we should, at least visit the patient and glean from physician, nurse or friends, anything that would aid us in arriving at a diagnosis; that we should then state to one or all our conclusions in regard to prognosis and treatment. We should thus discharge our duty and the responsibility of the future conduct of the case would not be ours. In fact we have the authority of one whom we might almost term the chief apostle of the code of ethics, in this matter, Dr. N. S. Davis, editor of the Journal of the American Medical Association, and formerly President of the Society. The case is so apropos that I quote it quite fully from the "Journal" of July 24th, 1886. This hypothetical case is presented and the editor is asked to answer.

"A man requested a regular physician to visit his wife, who was supposed to be in a critical condition, having been delivered a few hours previously under the care of a homœopathic physician. The physician responded to the case, examined the patient and gleaned the history of the case from the friends and the physician, who was present. A prescription (not discussed) was left by the regular physician who retired and saw the case no more." 1st. "Was this a consultation in the true meaning of the term?" 2d. "Did the physician violate the code?" Dr Davis says: "Regarding the hypothetical statement above as strictly correct, we answer both questions in the negative. To visit a patient represented to be in great distress, or critically sick, examine the patient and get whatever information can be obtained from those present, even if one of them happens to be a physician, either regular or irregular, and then proceed to administer whatever relief can be afforded, whether it be to introduce a catheter, apply the obstetric forceps, or write a prescription and give the necessary directions for its use to the patient, or those nursing him or her, constitutes no more a consultation with the physician present in the room than with the nurse or any other party present." The Doctor then goes on to define what, in his judgment, would be a consultation, but we will let this quotation suffice, as we are not supposed to want to violate any professional obligation, but have, at least in a measure, satisfied the patient or his friends, and most of all our own conscience, that we have added our mite in the endeavor to mitigate the woes of a fellow mortal.

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Another subject to which we would call the attention of both the profession and the laity of this and other States, is the equality on which we receive our sister physicians.

While in some sections of the country medical societies are still debating whether to admit women, the old Vermont State Society opens wide its doors and bids them welcome to all their privileges and honors, on equal basis with their brother physicians, requiring in both cases that they show themselves qualified by a diploma from some regular medical college which is, at least, prima facie evidence of a good medical education.

One of the subjects, discussed at some length in our President's address of last year, was expert testimony; and while he ably presented the injustice and even robbery of members of our profession by compelling them to give, without extra compensation, their opinions, (the knowledge necessary to form such, having required a very liberal expenditure of money, time and mental labor), in his leniency, he refrained from stating how wide-spread among bench and bar, and even extending to the laity, is the idea that almost any opinion may be obtained from prominent members of the medical profession who are well paid experts. In order to show this, I take the liberty to quote from several well-known authorities.

"Prof. Chaille, speaking for the medical profession, declares that, with the power of medical science crippled at coroners' inquests, then prostituted by the partisan opinions of incompetent experts, then presented by interested advocates, and at last, when emasculated of all vigor, submitted for decision to those unable to estimate its weight, what wonder that such gross misapplication of medical knowledge brings upon it that public contempt which belongs to methods so monstrous, and to which true medical knowledge is a helpless, pitiable, disgusted victim." Our own scholarly and courtly Phelps, Minister to the Court of St. James, and who but narrowly escaped being Chief Justice of the nation, says that, "if he were to venture to pass any criticism upon a profession so honored and so honorable as the medical, deduced from a long experience in courts where he has seen many physicians brought forward as witnesses, that it is too often the case that physicians come forward as witnesses without reflecting upon, without realizing the importance that may be attached to what they say." He also cautions medical experts "not to permit themselves, under any circumstances, to be enlisted in a cause in sympathy, feeling or fact, on one side or on the other."

Lord Campbell puts it in much more emphatic language when he

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says "that skilled witnesses come with such a bias on their minds to support the cause in which they are embarked, that hardly any weight should be given to their evidence." Chief Justice Chapman, of Massachusetts, thinks that "the opinions of experts are not so highly regarded as formerly, for while they often afford great aid in determining facts, it often happens that experts can be found to testify to anything, however absurd," while Judge Davis, of Maine, is quoted as going still further and saying: "If there is any kind of testimony that is not only of no value, but even worse than that, it is, in my opinion, that of medical experts." The late Judge Redfield, of our own State, said: "There is but one opinion as to the fact that this kind of testimony is extremely unsatisfactory."

In Taylor's work on "Medical Jurisprudence," he says: "Perhaps the testimony which least deserves credit with a jury, is that of a skilled witness. These gentlemen are usually required to speak, not to facts, but to opinions, and when this is the case, it is often quite surprising to see with what facility, and to what an extent, their views can be made to correspond with the wishes, or the interest, of the parties who call them. They do not, indeed, wilfully misrepresent what they think, but their judgment becomes so warped by regarding the subject from one point of view, that even when conscientiously disposed, they are incapable of expressing a candid opinion. Being zealous partisans, their belief becomes synonymous with faith as defined by the apostle, and it too often is but the 'substance of things hoped for, the evidence of things not seen.'"

But why multiply quotations when a prominent Massachusetts brother, Dr. H. F. Holt, in speaking on the subject, says that, "during quite an experience in court, with a single exception, I have never heard medical testimony commended by the presiding justice, but often I have heard the judge, in his charge to the jury, refer to such testimony in a way anything but complimentary to the medical witness, and quite as often it is ignored altogether."

Now gentlemen, what means this severe and bitter arraignment of the medical profession, and especially the older and most prominent members, for I am happy to say that we middle-aged and younger men are rarely called upon to testify as experts? Have both bench and bar conspired to unwarrantably attack our honored profession, or do the cold facts justify most of the above language? If we are honest, it seems that we must plead guilty, at least in part, with perhaps some extenuating circumstances. The question may well be asked, what has brought medical testimony into such seemingly merited disrepute, while

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in other respects, with but few exceptions, the medical profession is regarded by all with honor, and is above suspicion.

Dr. Holt says: "One reason is the training the medical man gets in his every-day work. This work, unlike that of any of the other learned professions, is done in the privacy of his office, or that of the sick chamber, away from the world's scrutiny, away from the world's criticisms, and the physician is accountable only to his own conscience as to what he may do; he forms his own opinions and sustains them in his own way, having as an audience only his willing patient who accepts without question his conclusions as wisdom and truth. In that close communion with himself, which is a necessity of his professional life, he draws further and further away from the outside world, creates and develops ways of his own in discussing such questions as are presented to him in his daily work, thus forming habits of reasoning, purely the result of the bent of his own mind. Such a training is little calculated to sustain or help him in the most difficult and trying position in which he can be placed, that of the witness box, where, if he would do credit to himself and honor to his profession, he must not only state his opinions clearly and distinctly, but must also as clearly maintain them. That, too, he must do under the immediate eye of the judge and standing face to face with the jury and the bar, one member of which, at least, is watching every word, every expression, every answer and every opinion that he may give, to find some weak point in his testimony, some vulnerable point where he can make a successful attack; and often, I am sorry to say, this interested advocate is assisted in his assault upon a medical witness by a brother doctor, who sits at his elbow. I say such a training as a physician or surgeon gets from the experiences and necessities of his professional duties are little calculated to sustain him in the contests that await him on the witness stand.

"Another one of the principal reasons why doctors make such bad witnesses, as the lawyers say, is, I believe, the neglect to study the case as well as everything relating to, or having a bearing on the medical questions involved, thoroughly and carefully. I am sure that it is quite common for medical experts to testify in cases where thousands of dollars depend upon the medical facts and their proper interpretation, without ever giving the matter any real thought or study, or without even looking up the literature of the subject involved." He also says that, "time and time again I have heard medical witnesses asked what books they had read on the subject, when they could not give the name of more than a single author, and often not that.

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Some years ago I heard a doctor who was on the witness stand as an expert in a case where damages were claimed for an injury producing the so called pendulous bowels, asked, 'What keeps the bowels in place?' After some hesitation he answered, 'the walls of the abdomen.' 'Yes, but what else keeps them in place so that they do not get displaced or tied up?' After much hesitation and embarassment he answered, 'I don't know.' This was not an ignoramus, but an educated physician, a member of the Massachusetts Medical Society, but who had come into court without the remotest idea of the real purpose for which he was there; he had come there, thinking, perhaps, that he could tell the story to the jury just as he had told it to his patients, without being asked the why and the wherefore of his opinions other than his patients had asked him, and that they could be answered in the same way. Had such a witness been about to perform an important surgical operation, either alone or in the presence of one or two physicians, perhaps, where he was not quite sure of his anatomy or of his diagnosis, would he have brought his patient to the operating table until he had thoroughly looked up the anatomical points involved? Most certainly not; the most reckless surgeon would not trust himself to that extent. Still he steps on to the witness stand, where he is to give opinions that are to be the foundations of justice between man and man; where he is to stand for the honor of his profession, under the ordeal of a sharp cross-examination, before the world, with no special preparation for such a contest; in fact he goes there just as he would go to see one of his patients, suffering from some trivial disease. I am sure that this case is not an exceptional one, and that careful, painstaking study of the question about which the medical expert is to give evidence, is rather the exception than the rule. What wonder, then, that the medical witness sometimes leaves the stand he has taken a few moments before with so much assurance, defeated and humiliated?"

In very many cases I certainly believe that the family, or attending physician, although he may be a man of the greatest skill and ability, would make a poor expert witness, especially if it be a case where the patient is intentionally aggravating his symptoms for the sake of possible damages. I am afraid that the most of us would pay too much attention to the patient's subjective symptoms, that he was constantly suffering pain, etc., etc. Our sympathy and personal interest in the case, perhaps for weeks, would be likely to bias our judgment. In fact, it is more than possible that the most intelligent physician may be intentionally misled by a designing patient, as the following case, reported by the Hon. E. J. Phelps, well illustrates. He says: "I remem-

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ber being concerned in a case where a woman, who had met with an accident on the highway and been thrown out of a wagon, had a miscarriage immediately afterward and was reduced to the point of death. She recovered and brought an action in which her husband joined. They were all strangers to me, the transaction having occurred in a distant county, but had the appearance of being respectable people, and I became much interested in her case. It seemed to me a very hard one, and especially as the town set up the defence that the claim was a deception and a fraud. She recovered a considerable judgment; and afterward it came out, as the fact was, that at the time of the accident she was driving home from an operation that had been performed upon her for the purpose of producing an abortion. She met with this accident on the way home by a defect in the road, but the subsequent miscarriage, which was the principal foundation for the claim for damages, was, of course, the consequent of the operation and not of the accident. The counsel were taken in, the physicians were taken in, great injustice was done, and yet I do not know that either physicians or counsel on the side of the patient could be blamed." This, of course, is a very exceptional case, but I believe that there are many cases where the family physician has his sympathy strongly aroused by the statement of the patient, where there is but little, if any, objective evidence of disease, and that he really believes that the physician who pays but little attention to the patient's complaints, is prejudiced and unfair toward him.

When a suit for damages is thought about, the plaintiff's legal adviser is very apt to ask somewhat leading questions of the attending physician, in his endeavor to put his client's case in as strong a light as possible, and if he once commits himself, he has opinions to sustain, and they are apt, under the circumstances, to be fully as favorable to the patient as the facts will warrant. The patient and his friends also expect him to testify strongly in his favor. Thus I believe that family physicians should not generally be used as court experts, if we may be allowed to use that term. The same is true, but perhaps in a lesser sense, of the physicians summoned by the patient's counsel to examine their client and testify for him in court. They examine him with the family physician, in the presence of his legal advisers, and the points in the case that are strongly in favor of the client are much more prominently brought out and discussed than those that would, perhaps, interfere with the awarding of damages. In short, as the law now is, the party who desires to use the testimony of a medical witness, selects and examines him, and many times he goes into court more as an advocate charged with the interests of one side.

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Yes gentlemen, we may as well admit that the best of us human beings, are prejudiced beings, and that the very cream of "bench and bar," some of whose members have so severely criticised our profession in the matter of expert testimony, are no better than the humblest of us, for how else can the famous eight to seven decisions of the Electoral Commission be explained? Here grave and reverend Judges of the Supreme Court, and the certainly should-be foremost statesmen of the land, decided questions pertaining to the highest office that sun shines upon, the Presidency of the United States, according to their political prejudices. No matter whether right or wrong, the fact remains that on questions of law, their decisions were in the direction of their political preferences. With such examples before us, can they blame the physician from being, at times, prejudiced in his patient's favor? And the question now is, how to eliminate, as much as possible, this element from our courts of justice, and to have the medical expert go, as the judge goes, bound to deal impartially with both sides.

That the importance of expert testimony may not be underestimated, I quote an eminent legal authority, who says: "It is important in the first place to the parties concerned. Life is often involved in it. There is hardly a day in the year, but somewhere, in the range of common law, some life is trembling in the balance, dependent upon medical testimony. Thousands of men have gone to their death upon such evidence, and as many more have been saved from death by it. It involves character and liberty very often, which are better than life. It involves family and social relations; it comes between husband and wife, parent and child, brother and sister. And it involves constantly large amounts of property, great public interests and all sorts of private concerns. It is important likewise to the administration of justice, that most precious of all public functions, too often, like good health, unappreciated till impaired; and especially important because such evidence, unlike ordinary testimony, can rarely be answered or refuted outside of the profession from which it comes."

Dr. S. T. Brooks, in the annual address of last year, says that "The conflict of opinion between men of science and distinction in the profession is so frequent and decided as to bring all expert testimony into unmerited disrepute," and he thinks that "no question affecting the dignity and honorable character of the profession demands a more thoughtful inquiry than the remedy for this evil." He quotes Dr. John J. Reese's opinion: "The only true and proper system is for each State to appoint one or more experts who shall be State officers, physicians of thorough experience and training in this particular line, who shall de-

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vote their time and attention to this duty, and for which they shall receive adequate compensation," And Prof. Ordronaux, who says: "Let experts be summoned as true *amici curiæ*, and let their examination be restricted to the court solely."

But gentlemen, I am presumptuous enough to believe that a State law, allowing the presiding judge, at his discretion, or at the request of either side, to summon a medical expert, whose fees should also be provided for by law, would more fully meet the present necessities of the case and be more acceptable to our legal friends and to the people. The judge would then have it in his power to summon a medical chemist, or toxicologist, if occasion demanded, or if, on the other hand, an expert surgeon was demanded, he would be summoned. If it happened that there was great local prejudice in a case, either for or against a client, the judge could easily call as an expert one entirely outside the range of local influences, and thus perhaps be more sure of an unprejudiced opinion. Nor are great skill, large experience and strict integrity of character the only elements in the makeup of a successful medical witness. Most of us can call to mind professional brothers whose opinions and advice we would value very highly in the sick room, who make anything but a creditable appearance on the witness stand. They have not the faculty of conveying to the public or the jury the knowledge that they undoubtedly possess. On the other hand, others can, with due preparation, go upon the witness stand and state the same scientific facts and truth the case requires with an almost perfect clearness, precision and certainty. But in either or both cases, I believe that, if the practitioner was summoned by the court with a full understanding that he was to act, as it were, as medical instructor to judge and jury, he would be more fully prepared, from a careful study of all the points in the case, and the strong feeling that he was chosen for both sides and was equally the representative of both, to give a complete and impartial medical opinion in the case.

In my judgment, if it becomes the practice for the court to summon the medical expert, we should be more sure of perfectly impartial testimony; that the witness would make the case more of a study, and thus be better able to convey scientific truths more clearly to judge and jury; in short, that the ends of justice would be better served, and that the medical expert would do more honor to himself and his profession than, in most cases, at present. And under these conditions, we could hope that he would deserve and command the confidence of both sides, and his testimony would be received as the unbiased and the uncolored truth. The responsibility of selecting a suitable man would remain

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with the Court, and I am confident that he would be chosen, as Dr. Brooks suggested, "on account of superior skill and knowledge, large experience, accuracy of observation, discreetness of judgment, and, above all, thorough integrity," and also on account of the clearness with which he could impart facts and opinions to the jury.

Since writing the above, I have been very much gratified by the receipt of a paper from the pen of Dr. F. W. Draper, of Boston, whom many of you know is a lecturer on Medical Jurisprudence in Harvard Medical College, and a prominent authority in medico-legal literature. His opinion is so valuable and so strongly sustains what I have stated, that I quote him quite fully; he says: "It is plain that the only way out of the difficulty is through legislation. Statutory law must prescribe the *modus operandi* and forbid practice contrary thereto, and establish legal provisions, which shall be clear and just, for the guidance of all concerned.

"Without pausing to review the various propositions that have been made from time to time for compassing this end, I remark from the outset that, as may readily be inferred from what has been presented, the first thing to be desired is the complete removal of the medical witness from the influences and temptation of partiality; he must be lifted far above the plane of bias. This is the corner-stone upon which the entire new structure must be built, if the evils of which we complain at present are to be avoided. Other provisions are mainly correlative and subordinate details growing out of this.

"To secure this end, the best way, because it is the most practical and the most in accord with the American notions of fairness, is that which would provide that the medical expert in any action at law, civil or criminal, should be the choice of the two parties contending. Grant this primary principle, and all other secondary questions and exigencies will find comparatively easy adjustment. The advantages of such innovation, both theoretical and practical, are too plain to be mistaken. Theoretically, a statute covering such a plan would secure experts in fact as well as in name, since it would obviously be for the interest of all concerned that the best medical judgment should be obtained upon technical questions involved in the issue on trial. Instead of the present deplorable exhibitions, so amusing to lawyers, so discreditable to the medical profession, so subversive of justice, we should see a true representative of medical science, selected because he is recognized as such, appearing in court as the honorable interpreter of medical data, the instructor of the court and jury in matters of which they are presumed to be ignorant. We should see him the calm and dispassionate

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exponent of the most recent authoritative adva nces in science as well as of the settled principles which are the fruit of long experience. We should see him, with the same judicial impartiality which the presiding justice himself must display, passing judgment, without fear or favor, on matters which legitimately fall to his office as an expert. There would be little danger that this altogether honorable function would fall into unworthy hands under such a system; the man would, from the necessities of the case, be well-known as the possessor of extraordinary knowledge fitting him to comprehend and to elucidate the points presented in the testimony. The man of pronounced and peculiar views, the man of hobbies, would not be sought; his judgment is already discounted.

"In practice, the expert thus selected because of his eminent fitness, his experience, his judicial fairness, his independence, would make such investigations as the case demanded, would listen to all the testimony, and at the proper time would report his conclusions either as oral testimony, or preferably, in the form of a written statement. Here would occur an opportunity for professional distinction. The name of medical expert, instead of conveying with it a questionable flavor, would become a term of good repute, attracting rather than repelling the master minds of the profession; while the many-sided questions presented in legal suits and actions, would offer occasions for medico-legal reports such as have made Germany and France confessedly the leaders in forensic medicine."

And now gentlemen, while the medical profession has been severely arraigned on the subject of expert testimony, and we have, in great measure, admitted the justice of the censure, I think you will pardon me if, in closing, I deviate a little from my subject, and say a few words eulogistic of our chosen profession.

Members of it have, in times past, stood shoulder to shoulder with the laity and their legal and clerical friends in the smoke of battle, and freely and gallantly laid down their lives, or won glorious victory for their common country, at the cannon's mouth, amid the carnage of battle; but gentlemen, I claim that it takes a sublimer heroism, a truer courage, when plague and pestilence sweep the land, to leave wife and children, or, at best, dear friends, and enter not only the plague-stricken, but also the well-nigh deserted and panic-stricken districts where we well know, from knowledge born of experience, that the chances of death from loathsome disease are far greater than on the field of battle where the enemies' batteries are vomiting forth both shot and shell, and maiming and mangling their hundreds and thousands.

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A modest tablet commemorates the memory of seven young men who thus met their death in New York city. Twelve young physicians entered the hospital as unpaid assistants, and at the close of the year, only five remained to tell the story of the heroism of their companions. They entered that pestilential battle field as fully conscious that some of their number must meet death, as though they had led their comrades in a charge for the enemy's guns on the hard-fought battlefield. Nor are such instances isolated ones among the medical profession. Indeed, we may with justice mention fever-stricken Florida, where to-day some of the noblest of our profession are staking life and happiness in their endeavors to relieve suffering and stay the dread plague. Thus we think that while our profession has its faults, its virtues far outshine them.

SHOCK AFTER SURGICAL OPERATIONS AND INJURIES.

By J. N. Jenne, M. D.

Mr. President, and Gentlemen:—

Shock may be defined as a condition of sudden depression of all of the functions of the body, caused by violence or by powerful mental emotion.

If a person be subjected to the influence of extreme terror; if a joint be shattered, or an important viscus be injured, the whole system receives a powerful impression and its functional activity is more or less stunned.

Upon this subject very little has been written, and until twenty-five years of the present century had passed do we find it given even a passing notice.

When we consider that of the numerous accidents and wounds which produce death, the greater portion do so by the suddenness of the shock to the vitality of the frame, rather than to the interruption of any important function, the interest of the subject will appear in its true light.

I consider it a most important and dangerous affection, implicating more or less the whole of the vital and animal functions, and hence coming strictly within the province of the physician as well as that of the surgeon. Injury is the chief cause of Shock, and, other things be-

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ing equal, the more extensive the injury, the nearer it is to the center and the more it assumes a crushing character, the greater the Shock will be.

The passage of a gall-stone, or a renal calculus, the crushing of a finger or a testicle, severe scalds or burns, occasion severe Shocks. Pain without organic disease may, undoubtedly, alone produce Shock, but is not usually an essential factor in its production.

Hemorrhage greatly intensifies it, and it is many times difficult to separate the symptoms referable directly to the injury to the nervous system and those due to the loss of blood. It is, however, independent of both pain and hemorrhage, for frequently the operation of castration and ovariotomy, or any operation involving the opening of the abdominal cavity, are attended by a great degree of Shock when the pain and hemorrhage are inconsiderable.

Life may be destroyed by certain agents which leave no visible traces of their operation on any part of the body. A blow upon the epigastrium may produce death, yet the most searching scrutiny fail to detect any physical changes in any organ or tissue; but it is necessary to limit the application of the term Shock and not include under it all cases of death occurring after injury without leaving definite post-mortem appearances, for undoubtedly many causes of death attributed to Shock are really instances of rapid absorption of septic fluids, or from hemorrhage which may have been interstitial, or from fat emboli after crushing injuries of the marrow of bones, or from rapid abstraction of heat from sudden cooling of the abdominal viscera.

It would certainly be unscientific to attribute death to Shock in such cases. The most obvious manifestations are signs of lowered activity of the cardiac, respiratory and sensorial functions, and of the surface temperature.

Its close relationship to the nervous system renders the investigation of the pathology and etiology of Shock, a difficult problem; hence the diversity of opinion as to its minute nature.

Death from shock seems to occur from spasmodic contraction of the heart, or from sudden paralysis of the cardiac and respiratory nerve centers. The heart in the former case is found contracted and empty, and in the latter, dilated and filled with blood. It is stated that in death from shock, electrical muscular irritability and contractility cease with the heart's action, or in other words, chemical or molecular death occurs simultaneously with somatic death.

From the fact that grave disease of the cerebral substance may exist without producing symptoms of Shock, it seems probable that the sym-

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pathetic system of nerves are the ones particularly involved in the production of the train of symptoms denominated Shock.

If we believe that cerebral concussion is due to minute laceration of the brain substance, then it approaches the condition of the peripheral cerebro-spinal system of nerves when subjected to injuries known to produce the symptoms to be described.

It is averred by some, however, that Shock does not involve primary nerve lesion, but may be produced by the introduction into the blood of certain agents, such as potassium cyanide, which act directly upon the cardiac muscle, and by impairing its contractility, give rise to those numerous secondary manifestations of Shock which depend upon arrested or impaired circulation.

However, it seems probable, from recent investigations, that the disturbance of nervous equilibrium is to be found in the sympathetic vasomotor system and involves paralysis of the heart and the contraction of the minute arterioles, as evinced by the cold ashy surface and shrunken skin. If we adopt this theory then we almost or quite ignore the function of the cerebro-spinal system in estimating surgical Shocks, and would expect quite as great a degree of Shock from a crushing injury to a paralyzed as to a non-paralyzed extremity, which can hardly be true. Shock, then, is the result of some violent and sudden impression upon some portion of the nervous system, acting through some nerve center upon the heart and destroying its action. Yet there can be no question, that the system in general is more or less affected and all functions more or less suspended. This conclusion is confirmed by post-mortem appearances.

The heart is dilated and filled with blood, the whole venous system, particularly that presided over by the splanchnic nerves, are paralyzed and distended with blood, which must of necessity have been abnormally diverted from other channels, an explanation of the blanched condition of the skin, the small veins of the surface, the feeble pulse, and the state of general depression of all the vital functions of the body observed before death from Shock.

That the brain suffers from a similar deprivation of blood, is shown by the mental torpor or feeble irritability which are constant features of this condition. The symptoms of Shock are, first, those directly referable to the physical injury to the nervous system, and those arising from the mental system, aroused or excited by the injury or operation. In this form the patient trembles, is pale, the skin is blanched, the eyes lose their lustre, the lids droop, there is vomiting and the patient com-

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plains of being cold. The pulse is feeble and rapid, the surface is cold and covered with beads of sweat.

If the Shock be severe, consciousness is lost in part, the face loses its animation, which is replaced by an expression of fear and anxiety; the temperature, which is a very important symptom, falls rapidly, the pulse becomes weaker—scarcely perceptible, the respiration is shallow and sighing, the sphincters are occasionally relaxed.

The fall in temperature is more marked, other things being equal, in crushing injuries of joints, scalds and burns, and when loss of blood has been considerable.

Shock is greatly influenced, in degree, by individual susceptibility, by the character of the operation, and its location, by sex and by previous condition of health; and apart from considerations relating directly to the body, the character and conditions of the mind, also exercise a most subtle and powerful influence upon the degree of Shock, particularly in the slighter forms.

Unquestionably, the relatively greater Shock from injuries received in railroad accidents, is from the prominent manner in which they are received, and the startling announcements of the press regarding these accidents. Authors sometimes give unfair bias to their statements, I fear, in favor of railroad injuries. The nervous system is not more susceptible to these injuries than to any other mode of injury, and to apply the term "railroad spine" and "railroad concussion," is reprehensible, and has given rise to actions for compensation for alleged injuries to the nervous system, of the most ridiculous nature.

No other pathological conditions present themselves, than those arising from ordinary violence. From all that we can gather concerning injuries to the nervous system, it appears that they in all cases, whether produced by concussion in railroad accidents, or from other causes, resemble each other in every particular; therefore, to introduce the word "railroad" in so prominent a manner is, to say the least, unjustifiable.

The only possible difference that can exist, must be found in the mental condition of the subject at the time of the receipt of the injury, as there can be no doubt that firm conviction that there is no hope on the part of recipient of even a slight Shock, may be sufficient to turn the balance against recovery.

Instances of death from slight operations or injuries can be explained in no other way, and the operation or injury can only be connected with the result, as standing in causative relation to the mental condition. Those who have watched patients most closely, attach the greatest weight to this matter.

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Age also exercises a most powerful influence upon the degree of Shock. As age advances, the vital forces decline, and while the constitutional powers may be sufficient for maintenance of life, any extra demand for repair it is not able to supply, and, as it has no reserved force, reaction fails. Sudden confinement alone retards a patient's reaction, particularly in those of previous good health;—a probable explanation of the greater mortality from the major operations for acute disease, than for long-standing disease.

The confinement alone may tend in the aged to a fatal result, even when the injury is insignificant.

Location influences greatly the danger of Shock from operations and injury. It is rarely fatal when the extremities alone are involved, unless the injury be of a very severe and crushing character. Abdominal wounds, and wounds of the spinal cord, are attended with great Shock, but in the latter case the symptoms directly referable to the injured nervous system must not be confounded with those of Shock. Other things being equal, the degree of the Shock varies with the intensity of the impression; hence the greater fatality from capital operations for injuries, than from the same for long-standing disease; the Shock of the operation in the former is added to the shock of the accident producing the injury, and then, too, in the former the person passes directly from a state of activity to one of confinement, and the irritation to the nervous system, thus induced, operates against recovery.

Complications of Shock are such as arise from the injury producing it, such as hemorrhage, and recovery from the slighter forms is usually complete and rapid. In drunkards it frequently terminates in delirium tremens.

Pre-existing disease of the heart or kidneys, renders the person more susceptible to Shock, and Shock more sevère and dangerous.

The prognosis largely depends upon the nature of the injury, complications, and the mental and physical powers of the person.

The lower the temperature falls, the more unfavorable the prognosis. A fall of over one degree in a case uncomplicated by hemorrhage, would be unfavorable, otherwise the longer the Shock endures, the feebler the manifestations of life, the more guarded should be our prognosis. Extreme feebleness of pulse, a sighing respiration, great mental torpor, involuntary relaxation of the sphincters, tremor, singultus, all indicate a condition of gravity. When the respiratory movements have ceased and the pulse is imperceptible, we listen for the heart sounds; if we hear nothing, it does not follow that recovery is impossible. There

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may be some action of the heart so slight as to be imperceptible, and with this amount of life there is hope.

In experiments upon the higher animals, where the action of the heart is arrested by Shock, by sudden destruction of its nerve centers, its movements will subsequently be resumed, and if artificial respiration is kept up, they will continue for some time.

Further, when temporarily paralyzed by simple Shock, uncomplicated with organic disease, as for instance a blow upon the epigastrium, the heart will, after a longer or shorter period of repose, resume its action and permanently recover. Such cases have occurred in the human subject. Where a person recovers from Shock, he passes through a stage called reaction, which in favorable cases is gradual, and in many cases is only completed after some hours or days, when the several organs of the body resume their normal functions.

An improvement in the pulse, and respiration, are among the earlier signs of reaction, and when accompanied by a rising temperature, are very favorable signs.

Reaction is indicated by increased warmth of surface, frequent pulse and highly colored urine, thirst, headache and restlessness, and although we do not wish it to be inordinate, giving rise to traumatic delirum, yet it is preferable to a deficiency of reaction, as it is easier to control action than to create it.

It is important, however, to make a distinction between Shock and "prostration with excitement." This condition is recognized by the dry condition of the skin, the flushed face with anxious countenance, rapidly bounding but easily compressed pulse. The respiration is hurried and irregular, the tongue is tremulous, and there is often obstinate vomiting and thirst, with occasional rigors. These are succeeded by restlessness, anxiety, and delirium; the surface is covered with cold, clammy sweat; convulsion or coma, more or less profound, and death follow. The symptoms are extremely variable, both as to the period of their occurrence, and their manifestations, particularly of the cerebral functions. There may be little more than a slight mental irritation, or it may present all the features of delirium tremens.

In the treatment of Shock, our first object should be to maintain or excite the action of the organs of respiration and circulation. We must here distinguish between collapse from hemorrhage, and collapse from violence done to the nervous system. In the former case, if the hemorrhage has been considerable, there is little hope. Transfusion has been recommended and tried with very flattering results in some cases.

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The difficulty of its immediate employment is fatal to its usefulness in many cases, but if practicable it certainly should be tried.

If we happily excite the heart to act, or if it is still acting, stimulants, brandy, or some of the more diffusible stimulants, like ammonia, with rest in a horizontal position, the head on a level with the body, with applications of heat to the extremities and to the epigastrium, particularly if absorption seem tardy, as shown by vomiting of the stimulants administered. If the patient cannot swallow, stimulating enemata or brandy administered hypodermically should be resorted to. As reaction takes place, stimulants should be withdrawn and food substituted in some of its more readily assimilable forms. Care should be exercised not to carry stimulants too far, for excessive reaction is "prostration with excitement."

In profound Shock, unattended by hemorrhage, the respiration should be carefully watched, and failure guarded against by artificial respiration. It has been suggested in such cases, if the external jugular vein is turgid and distended, to open it and thus relieve the paralyzed and distended heart. Tincture of belladonna has been recommended and used in conjunction with ergot, with a view of causing a contraction of the arterioles, thus distributing the blood which has accumulated in the abdominal viscera over the general system.

Stimulants and food should he here administered as soon as practicable. If excitement comes on, opium or henbane should be administered, and an ice coil applied to the head to procure quiet and sleep. Opiates are not admissible in the torpid form of Shock. Should inflammatory symptoms supervene, a mild purgative and a regulated diet with vascular sedatives are indicated. As a rule, patients should not be operated upon until reaction is established, unless it be an operation to arrest hemorrhage in case the arteries are extensively lacerated and exposed, in which case an anæsthetic is not required.

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REPORT OF CASE OF HYDROCEPHALUS.

By J. S. Richmond, M. D.

Child two years and four months old; born and lives in Windsor. The parents have always been perfectly healthy, and their habits unexceptionable—no hereditary taints of any kind, except scrofula on the father's side. The mother had a protracted and severe labor; the child's head was large when born, but there was no appearance of hydrocephalus. The mother says that in about two weeks after birth she noticed that the top of the head was "puffed out," and called the doctor's attention to the fact; that the doctor examined it, and assured her that he had seen other cases similar—indeed, that he had a more marked case then on his hands, and anticipated no trouble from either case.

But this child's head continued to enlarge, and has been constantly growing to the present time. To-day, June 16, 1888, this child weighed 54 pounds;—we thought that the head would weigh 44 or 45 pounds and the body 9 or 10 pounds. The circumference of the head is 42 inches; the distance from top of ears over the head, 27½ inches; from the nape of the neck over the head to the root of the nose, 40 inches; from external canthus of eye to upper edge of frontal bone, measuring toward the front fontanelle, 7 inches; to center of head 12 inches; from occiput to top of occipital bone—posterior fontanelle, 15½ inches; distance between the temporal bones at the anterior fontanelle, 10½ inches; length of child, 32 inches; from knee to external malleolus, 5½ inches; humerus 5½, and forearm 5½ inches; calf of leg, 5 inches; ankle, above malleoli, 4 inches; instep, 4 inches; above hips, 15 inches; bones seem to be in good condition, but bones of head very thin; child seems intelligent, will laugh and is fond of attention; eyes very large and protruding; vein showing at upper part of forehead and running nearly in median line to occiput, can be seen for thirty feet and looks like a blue ribbon; has a good crop of hair, which curls and is nine inches long. The under lids are drawn upward so as to half conceal the eyes, and the child frequently pulls them down with its fingers the better to observe what is going on around him. The diet has been mother's milk until about the ninth month, and then cow's milk—new milk. After about four months' use of one cow's milk, the child becomes costive, and a new milch's cow has to be supplied, and

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soon the bowels become regular again. Of course the child needs constant care, and this child has it. It has heretofore had convulsions, but not to any great extent or apparent injury. The head is so heavy and so long in proportion to its width, that the sides have to be placed on the pillows and various kinds of pads and cushions to support it, and in spite of the utmost care there are almost constantly bed sores near the top of the parietal bones. The head bones are enormously spread out, but are very thin and can be easily bent or indented and spring back to place again. This case is one of interest in several respects. It is wonderful that the child should live at all, under the circumstances; that convulsions are so seldom; that the child can remain in so good condition; that it remains so bright with such an accumulation of fluid. To me the case is unique.

ACUTE CHOREA.

By F. W. Goodall, M. D.

Mr. President, and Gentlemen:—

During my professional career, but few cases of the above-named disease have fallen to my lot for treatment,—Acute Chorea.

The first case I remember, a little girl of eight years, in her first dentition I treated with bromide of potassium in full doses, and she recovered in about one week.

The next, an old chronic case with an acute attack engrafted upon it, was a lady upward of eighty years of age, and I exhausted all my medical resources for Chorea before she died.

The third case was in 1871, a young girl of about thirteen. I first saw her June 11th, and in spite of all the assistance I could command, she died the 22d, having been sick eleven days. Chloral, then in its infancy, entered into the medication. Autopsy revealed quite an extensive softening of the spinal cord. No cause assignable for the disease.

The next case of interest, was a girl of ten years, with defective eyes and a hereditary tendency. I gave her bromides, chloral, and cimicifuga, and gave the cimicifuga in *large* doses, producing very marked pain in the shoulders (deltoid muscles), and kept it up for several days. I also gave arsenic in increasing doses. I wish the gentlemen

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to note that I gave arsenic in increasing doses, as I may have more to say about it later on. I gave arsenic until I got *toxic effects*, i. e. injection of the conjunctivæ. I then discontinued it until the toxic symptoms subsided, and then resumed it, Fowler's solution, again giving it in increasing doses, my patient in the meantime going on slowly from bad to worse, so that at the end of a few months she had passed her eleventh birthday, and had become so feeble as to be obliged to keep her bed; I still giving arsenic in increasing doses. It was in July when she took her bed, and at that time emaciation was extreme. She had a tremendous cough, expectorated copiously a thick muco-purulent expectoration. She could not express the first trace of intelligence, by word, look, or act, and presented the facies of complete idiocy. For four or five months she continued in bed, in this deplorable condition, I hoping at each visit that death would do its work before my next, and thus relieve me of being so repeatedly reminded of my utter powerlessness in the case. After using arsenic in increasing doses and producing toxic symptoms repeatedly, with no perceptible effect on the disease, I began using the secondary induced current of a physician's double-cell battery, applying the positive pole to the cervical region, and the negative to the extremities. The girl being of unusual development before she became choreic, I conceived the idea of puberty playing an important part in the etiology. I accordingly directed my efforts with the electricity largely to the generative apparatus. Improvement was noticeable soon after beginning with the electricity, and in about three months from its commencement, menstruation took place, before the patient was twelve years old. This case went on to recovery of all the functions and faculties, except a little facial Chorea that still remains, and is, in my opinion, due to some defect of the eyes.

My last case of Chorea is one of the most interesting I have ever seen, and at the present writing, June 11th, is not fully recovered, but restoration to health is going on so rapidly, and, there being no choreic action anywhere in the economy, I consider complete recovery only a question of a little more time.

R. N. S., aged thirteen, was taken sick March 23d, 1888, with what proved to be acute articular rheumatism. On April 1st, the tenth day of his sickness, I saw him for the first time. I found him suffering the extremest orthopnœa. The tumult at the heart told the story. Our diagnosis (three of us) was endo—and peri—cardial complications. The struggle for life for the next few days was fearful, and it was about a week before we could feel by any means easy. During the next

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twelve days the case hung along with but little change, and of no special interest. The delirium which came on with the heart complication, was of a mild type, and at no time during the active heart symptoms was it entirely absent. About the 18th of April, some four weeks after the invasion of rheumatism, it was noticed that he lost the final "s" in speaking; e. g. eggs, his, hers, etc., were spoken without sounding the "s," and two or three days later I noticed a choreic action of the tongue when it was being protruded, and in two or three days more Chorea had become the predominating feature. The pulse at this juncture jumped about 30 beats per minute, and the upper extremities, shoulders, muscles of the neck and face, were all involved, and I use the word all, advisedly. I don't think there was an individual muscle, from the pectoralis muscles inclusive, upward, but what was (insane) choreic, and of the most violent type imaginable. The diaphragm at one time seemed involved, judging from the peculiar breathing, and the orbicularis oris, orbicularis palpebrarum, and other facial muscles, all the orbital muscles, recti, oblique, levators and depressors, and even the extensor and retractor muscles of the tongue were all engaged in the most grotesque, fantastic and ludicrous motions one can imagine. I can see the case now in my mind with great vividness, but my power of portraying the case with the pen or words is entirely wanting, and my imitative powers are alike deficient. Such cases can only be appreciated by watching them at the bedside day by day. The lower extremities were but slightly, if at all, involved, although there was a little inclination at times to an involuntary elevation of the pelvis. The decubitus, which was semi-erect during the acute heart symptoms, soon became dorsal, and at no time during my association with the case had there been any ability on the part of the patient to move the lower extremities, except just a very slight flexion and extension of the toes, or a very slight adduction or abduction of the knees. This loss of motion I ascribed, up to the invasion of Chorea, to the inflammatory soreness resulting from the rheumatism, and during the choreic action we had no means of determining the power of motion or any thing else very definitely, except what we could see. The brain seemed to be as choreic as any other part, and there was an entire absence of all intellectual manifestations and expressions. For days not an intelligent word, sound, or act escaped the patient. This case had been treated with salicin, after the heart became involved, in full doses, 20 grains every three hours, until it was deemed expedient to make a change, and at the time Chorea developed he was taking cimicifuga in full doses, both remedies, by the way, being alike beneficial in many cases

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of rheumatism and Chorea, salicin being one recently introduced in the treatment of Chorea and one which is highly esteemed by many. When Chorea became the predominating disease, I, having succeeded to the management of the case, gave Fowler's solution of arsenic in three minim doses to the drachm of Hazard's elixir of gentian with tincture of chloride of iron, three times a day. From a disposition on the part of the nurse to give full doses, I found that my patient was getting four minims instead of three, and from the first had proportionately that quantity more than I designed, but I allowed it because of the intensity of the case. I began using arsenic, Wednesday, April 25th, and gave it in "increasing doses." This, gentlemen, is not only the instructions, but it is the language of all so far as I know, concerning the use of arsenic in Chorea: "give it in increasing doses, until toxic symptoms are developed; then discontinue it and allow the toxic symptoms to subside; then again begin with the arsenic in diminished doses, and give it in increasing doses until toxic symptoms again appear, and so on until your patient recovers."

Mr. President, I followed the above plan in the case last preceding this one, and pursued it until heartily tired of it, and saw no benefit from it, and two of my neighboring physicians relate to me a like experience, except they produced no toxic symptoms, and, like me, they saw no beneficial results from it. However, in this case I not only gave it in increasing doses but I continued to push it even after I saw an injection of the conjunctivæ and a puffiness of the hands. I crowded it until I produced a still more profound toxic condition, as follows: The mouth and tongue became extremely dry and brown, the teeth covered with sordes, the lips cracked and bled, the eyes intensely injected, the whole face swollen, and the backs of the hands enormously puffed. the feet also puffy, but not so extremely as the hands, and in addition to the above I got the arsenical eruption and bronzing of the skin. When I reached this stage of poisoning, I was satisfied, and right here allow me to say, that I think writers and teachers are not sufficiently explicit in giving details concerning doses, and peculiar modes of administering certain drugs in peculiar diseases or conditions. I thought I gave arsenic in the preceding case, but I now think I only gave it very imperfectly, and in my opinion, my failure, and the failure of my neighbors, was due to the same lack: we did not give arsenic in sufficiently large doses, nor increase the dose rapidly enough to produce sufficiently profound toxic symptoms, and were I to make any further suggestions in this matter, I should say, if you use arsenic, *push it* until thoroughly marked toxic symptoms are induced, certainly more marked

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toxic symptoms than the reddening of the eyes. The arsenic, at this stage of my case, had produced a decided looseness of the bowels and they had moved nine times in the last three days, twice, three times, and four times, each day respectively. These movements had taken place in the bed, my patient had also urinated into the bed, and had not been thoroughly cleaned during this period of three days, and in consequence of the druggist having made a mistake in a prescription, my patient had had no chloral or bromide of potassium for twenty-four hours, except two five grain doses of bromide of potassium; hence he had had no sleep in twenty-four hours, and was in a deplorable condition. I now proceeded to play the part of nurse. We changed his body linen (flannels), washed him, put him in a clean bed, administered a mild current of induced electricity for twenty minutes, with the positive pole to the cervical region, and the negative to the extremities, and at its close I gave him a ten grain dose of chloral hydrate with the sixth of a grain of morphine, and he went to sleep and slept seven hours without waking, and from that moment (when he went to sleep) his recovery seemed assured, and he slept on the average of fourteen hours per day, for the next week or two. The above change for the better occurred on Wednesday, May 2d. Improvement was slow but gradual, and on Tuesday, May 8th, all symptoms of arsenical poisoning having abated, except the bronzing and a slight choreic action persisting, I began again with the drug, giving it in two minim doses of Fowler's solution and continued it for three days, when the previous toxic symptoms again began to manifest themselves. I then discontinued it, and have had no occasion to return to its use, the choreic action having practically ceased. The electricity was continued daily from May 2d, and is at the present writing, June 11th, being used as above indicated. Six days after improvement began, on May 8th, the first voluntary motion was noticed, and consisted of a slight motion of the fingers of the left hand. The right arm was bent at the elbow at less than a right angle, and the hand flexed sharply on the wrist, and all the fingers and thumb were also sharply flexed and could only be straightened by using so much force as to cause a good deal of pain. There was but little if any intelligence at this time (May 8th), and as above stated, but little choeric action. We now discovered several gangrenous spots, one as large as a silver half-dollar, over the anterior superior spinous process of the illium, caused by pressure. If one foot rested against the other for a few hours, gangrene followed, so of other parts or the economy. Life barely existed. Two or three days after noticing the first motion of the fingers, I noticed a slight voluntary

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motion of the eyes, and on Sunday, May 13th, he moved the toes just perceptibly for the first time. This poor boy, not having been sufficiently afflicted, was visited about this time with urticaria of the most diffuse and intense character I ever saw, and from the entire absence of all mental manifestations during the choreic and urticarial periods, we are unable to say that delirium did or did not obtain at that time, but the fact that this period is all a blank, tends to establish the theory of delirium. The urticaria ran riot and seemed to defy medication about a week, when it subsided either spontaneously, or as a result of ipecac, rhubarb and soda in alterative doses. Strychnia now entered into the medication. Thursday, May 17th, he first sat up in bed, and the 19th he first put words together in a sentence, thus, "I don't like to hear you read." From this time improvement went slowly on, scoring some gain every day, until he now, June 11th, runs himself about in a wheel chair, propelling himself with his hands. He can not walk or get up alone on his feet, but he moves them freely, and the strength in his legs is slowly but surely returning. The bronzing of the skin is nearly all gone, the gangrene sloughs are all gone, and the surfaces are nearly healed.

One of the many questions in this case is, was the paralysis from extreme muscular weakness or central? I am free to confess an inclination to both sides of the question. The extreme dilatation of the pupils would indicate great muscular weakness, the slow but steady return of motion in the extremities, the difficulty in protruding the tongue, the difficult articulation or disinclination to talk, the intense desire to be let alone. The disinclination to move, and up to the present writing his inability to turn himself in bed if he gets into certain positions, being obliged to call help almost nightly to be assisted into an easier position, all favor the idea of paralysis being due to extreme muscular debility. On the other hand, the contracture of the right arm and hand, the entire absence of knee jerk and diminished other reflexes, all point to a lesion of the spinal cord, and I cannot resist the idea of a myelitis of sufficient intensity to seriously impair but not quite destroy some portion of it. My second case was one of unquestionable myelitis, softening of the cord having been fully demonstrated by an autopsy. Concerning the etiology and pathology of chorea, but little advance has been made in recent years. Meteorological phenomena have been observed, however, and Lewis says that the mean tracings of humidity of the barometer, and of the thermometer, present no resemblance to the tracings of chorea; but a resemblance is "apparent between the chorea tracings and the tracings of cloudy days," and

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the tracings of storm centers. He also finds the lowest onset of chorea in October and the highest in March, while rheumatism is one month later, the lowest onset being in November and the highest in April, showing that "chorea" keeps pace month by month with the storm centers, and rheumatism is exactly one month later, which is not what would be supposed if rheumatism is a causative element in chorea, and yet Lewis regards this as one more link in the obscure chain which binds together rheumatism and chorea."

It has also been noticed by Dr. Geo. T. Stevens, of New York, that certain defects, or dissimilarities in the adjustment or working of the eyes, or from some lack of harmony in their mechanism, a nervous fret or eye strain is produced, causing a peculiar condition which gives rise in different cases to different phenomena: headache, epilepsy, chorea, etc., etc.

Acute inflammatory rheumatism of early life, seems to be intimately associated with chorea, if not its cause. Chorea also seems to be intimately associated with urticaria, as seen in my last case, and it is not infrequently met with as a complication or an immediate sequel in other cases of chorea. In many cases chorea is simply a neurotic disease, and some claim that it always is and urticaria is allowed by all to be neurotic, while acute inflammatory rheumatism, especially of early life, is questionable. It certainly presents in its migratory character some of the most marked phenomena of the neuroses, and I think I am correct in asserting that in many cases it is looked upon as purely neurotic in its nature, and as a deduction from the foregoing I ask: are not acute inflammatory rheumatism of childhood, acute chorea and urticaria different stages of the same disease? Are not they all simply different manifestations of the same poison, or due to the same specific element seeking an escape from the system by spending its force or exhausting itself on the different tissues involved in these several conditions. I am hardly ready to take this stand boldly, and yet here is a broad field for speculation.

In closing, allow me to say that at the time of presenting the details of R. N. S.'s case to this Society, he is practically well, he is enjoying all his faculties and functions.

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MEGRIM OR SICK HEADACHE.

By F. R. Stoddard, M. D., Shelburne, Vt.

Megrim or Migraine is usually the periodical protest of cerebral over tax in the acutely exhausted, comparatively young brain. It belongs more especially to the time of life from puberty to middle manhood, and, as Dr. Hughes says, is a temporary disturbance of equilibrium between waste and repair in the higher cerebral centers, arising from mental over-strain which expresses itself in slightly neurotic subjects like the outcry of an oppressed or famished nerve in neuralgia. It is not denied that it may not be caused by other conjoint causes than cerebral over strain, as those which tend to congest the head by exciting a disturbance of equilibrium in the systemic circulation, but any hereditary tendency to weaken by a little over-strain of the cerebral vaso-motor system, and the co existence of that strain which cannot be resisted, constitute the essential causes of an attack of sick headache. It is usually unilateral, involving one hemisphere, and that on the left side, the driving hemisphere, as Ferrier calls it.

Sick headache is periodic, but not distinctly so, for a certain stage of exhaustion must be reached, longer in some persons than others, and longer in the same individual at different times before the mental machinery resists further goading, and the brain asserts its right to rest. The tired brain, in refusing to be goaded to further work, prescribes its own proper therapeutics in the involuntary rest which the mind is forced to take from its accustomed labor. After this rest a sense of restored mental vigor is again felt by the patient which he is eager to expend, and he goes along again, normally for a while, expending only the daily accumulation of cerebral force, until the more or less nervous temperament of the person leads sooner or later to drafts on the reserved force of the cortex, and to its final and rapid exhaustion, with a repetition of the previous experience as its sequel. With the lowering of the brain tone from overtax, we have dilatation of the blood vessels, and the meningeal pain of distention and pressure, and increased mental activity, somewhat like that in early stages of intoxication, follow. Thoughts come thick and fast until the cerebral exhaustion is complete. Sympathetic influences pass downward to the stomach, nausea and emesis frequently follow, and the bowels sometimes move freely.' The co-existence of nausea followed by vomiting and then by sleep and final relief, has

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given to megrim the name of sick-headache, but the headache is not due to the sick stomach. The nausea is due to the sickness in the head. Megrim is indeed a very sick-headache, but in another sense. If vomiting continue long enough the hemicrania will of course cease with the vomiting, but to make the vomiting effective the stomach should be washed out with lukewarm water till it is empty of all its solid contents, and then hot water of at least 115 F. should be given, in from two to six-ounce draughts every hour or two, until twelve or sixteen ounces have been taken. This may be made more palatable by flavoring or by using commercial tea, which is often acceptable if not made strong and taken without sugar and milk. If there is a loathing of hot drinks along with the usual loathing of food, then cooling drinks should be used with a few drops of creasote, or half a drachm of aromatic spirits of ammonia, or carbolic acid water, or peppermint water, and a little bromide of patassium. All the special senses tend to rest, and their suggestions should be heeded by us in our management of the case. Nature in these sensations hints strongly at the rational restorative therapy; such hints to the wise physician should be sufficient. Every move means increased bodily discomfort; hence the patient asks to be left alone, not to be disturbed. The aching head, the painful eye-ball demand evaporating lotions, the best of which are ethereal for the head and laudanum and water of the proper temperature to evaporate readily for the eyes, for ether is painful if it gets between the lids. The sensitive retina and troubled vision demand the exclusion of light. The general listlessness and brain-weariness which the patient reveals when the painful feeling wears away, if the usual tendency to sleep does not then come on, or is interfered with, demand further brain rest, and our therapy and surroundings for the patient should promote rest until an apparently complete restoration follows each attack. The intervals of freedom from nervous headache should be prolonged by a course of treatment calculated to promote and maintain the nerve stability, and by a moral prophylaxis. To this end the patient should be made aware of the nature of his trouble, and how to avert its recurrence. He should have a mild unirritating course of cephalic galvanism in the intervals of the attack, and repeated until he has passed the time of several attacks exempt from them. A full dose of ammonium or potassium bromide, thirty or forty grains, and a minimum dose of arsenious acid should likewise be given nightly for many months, and in many cases as often as three or four times a day preceding the time of an expected attack. Bromide of potassium in forty-grain doses three times a day, is

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of special service if the patient is brought fully under its influence at the time when the first ocular disturbance appears. The digestive and assimilative processes are never to be lost sight of.

Besetting sins and moral or physical vices, that tend to bring on nervous exhaustion, should be inquired into and remedied by abandonment. In the constitutional treatment of sick-headache, plenty of pure, fresh air and sunlight and a nutritious and easily assimilated diet are the best tonics. Spinal and epigastric sinapisms are also of value. Where there is a tendency to anæmia, iron should be given with a good diet and tonics. In malarious districts quinia and arsenic, mercury and potassium iodide for syphilitics, iodine and iron for the scrofulous. The majority of patients with sick-headache require a regulation of their nervous forces. They need to be taught and medicated so as to stand life's frictions in a manner to give their brains a chance to rest and repair, and their stomachs a fair opportunity to do their work and answer the prayer of the brain for daily sustenance.

The indications for preventing occurrences of attacks of sick-headache are cerebral restraints and reconstructive medication. To this end the occupation of the patient should be regulated by his physician. The nervous system should be tranquillized, and the nerve capital and brain force economized during the longer or shorter interval between the attacks.

These patients need a physician to constantly advise and regulate them, as they need an attorney in their business affairs to keep them safe from financial shipwreck. The business maxim "never to postpone for to-morrow what ought to be done to-day," and never to wait for the next train, if by any possible means the train that has gone can be caught, should be modified to read, "what can be done to-day without violence to your organism, should be done, and if to-days train can not be made without over strain to your system, which may be the beginning of a subsequent breaking down of the cerebro-spinal system, wait for the next train and save yourself."

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MEDICINAL TESTAMENT OF FIBROUS TUMORS OF THE UTERUS.

By C. J. Russell, M. D.

Mr. President, and Gentlemen,—

Having been appointed by your Executive Committee to present a paper on this occasion, I cannot enter upon the task that is before me without expressing my consciousness of inability to accomplish it in the manner I would desire.

This sense of inefficiency is by no means lessened when I look at the names of those who have preceded me; when I remember the interest with which I, in common with you, listened to their words, and when I consider how completely abreast this Association is keeping with everything relating to the progress of medicine. On the other hand, my connection with the members of this Association gives me the assurance of having a sympathizing audience, one disposed to overlook defects in any honest endeavor to set forth the experience of any of its members.

When we broach the question of permanent cure of Fibrous Tumors of the Uterus, we find that there exists a vast difference of opinion in the profession as to the value of medicine. A large proportion, I might say a majority, ignore any treatment except surgical; while there is quite a respectable number who believe in the administration of certain remedies, but do not agree as to the therapeutic process which should be instituted, and, therefore, employ different medicines.

But it is not my purpose to relate the theories and experiences of others upon this occasion, but simply to furnish my own somewhat limited experience for your consideration.

On the 7th of June, 1885, I was summoned to Charlotte to visit a lady who was flooding badly, and fears were entertained by the friends of a fatal hemorrhage, as she had then been flooding for nearly a week and was in a fainting and exhausted condition; but by means of the tampon and half-drachm doses of Tr. Can. Ind. repeated every hour, I soon succeeded in controlling the hemorrhage. Then upon inquiry I found that she was about 44 years of age, had never been pregnant, and that for the past nine years she had been confined to her bed, menstruating every two or three weeks and each period lasting

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from five to ten days, and that previous attendants had diagnosed Fibrous Tumor as the cause of the menorrhagia and profuse leucorrhoea which invariably followed. On the 8th of June I again visited the patient, removed the tampon and prescribed tonics and a good nutritious diet, but did not see her again until after about ten days, when I introduced a uterine sound which readily passed upward, backward and to the right almost five inches, and as I could feel a hard round bunch extending up to within three inches of the umbilicus, I was convinced that the diagnosis of Fibrous Tumor was correct. But as my patient was in such a debilitated condition I did not dare attempt the expulsion of the tumor, and, therefore, told her to continue the tonics, and also left some of the Tr. Can. Ind. to be given as needed to prevent violent flooding. This treatment was continued for several months, and my patient became quite strong. I then prescribed half-drachm doses of Squibb's Fluid Ex. of Ergot three times daily and increased the dose to a drachm the third day, which produced contractions of the uterine walls and in about twelve hours pieces of the tumor commenced to come away, which process was continued for about a day and a half and nearly a quart of the pieces had been expelled, when the contractions and hemhorrhage suddenly ceased. I then discontinued the use of the ergot and resumed the use of tonics, nutritious diet, etc., and in a few weeks my patient was able to sit up, and has continued to gain since, having been able to ride for miles, and do light housework for over a year.

Her greatest difficulty is in walking, for her limbs even for months after she could ride, would not support her weight. But the hard round bunch can no longer be felt above the symphysis pubis and she has never had a violent hemorrhage since, although she continues to menstruate irregularly. I have never explored the uterine cavity since the expulsion of the tumor, and cannot say but that a rudiment remains; but I think if she passes the menopause in safety, she will experience no further trouble from this source.

I do not pretend that all tumors of this nature can be treated successfully with ergot, although in Pepper's System of Medicine, are reported nine cases of permanent cures by similar treatment and only one death, which is a very favorable record as compared with other modes of treatment.

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ACUTE YELLOW ATROPHY OF THE LIVER.

BY C. J. ALLEN, M. D.

The blood supply of the liver is derived from the hepatic artery and the portal vein. The different tissues of the organ are nourished by the hepatic artery, while the mesenteric, splenic, and gastric veins gather up the blood which enables this, the largest gland of the human body, to carry on its functions of secreting the bile and manufacturing liver sugar.

The portal vein, fed by its countless branches, which originate in all the principal organs of digestion, enters the under side of the liver and rapidly dividing and subdividing soon becomes a net-work of capillaries.

The rootlets of this physiological tree are found all along the alimentary canal from the stomach to the rectum. The portal vein is its trunk, while the twigs and smallest branches are all in the substance of the liver.

The great difference between the portal and the general circulation is in the arrangement of their final capillaries. Instead of being scattered somewhat uniformly through the substance of the tissue as are the capillaries of the general circulation, those springing from the portal vein are arranged in minute plexuses each surrounding a definite portion of the liver substance about as large as a millet seed. These tiny portions of the liver, surrounded by capillaries from the portal vein, known as the interlobular veins, and the connective tissue in which they ramify are the true acini or lobules of the liver.

From all sides of a lobule, branches springing from the surrounding plexus, enter its substance and there breaking up form a capillary net-work similar to that of the general circulation.

These capillaries gradually converge toward the center of the lobule where, by their union, the intralobular vein is formed, which, leaving the lobule, enters the sublobular vein on which the lobule rests.

With this brief resume of the anatomy of the liver we are ready to discuss that strange affection known as "acute yellow atrophy of the liver," which, according to Legg, is one of the rarest diseases known to man.

Bartholow defines the disease as an acute affection of the liver characterized by a rapid wasting or degeneration of the organ.

Occasional cases resembling this disease have been described from the earliest time, but the first treatise written upon it bears the date of

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1843, and it is only in the last quarter century that our knowledge of the trouble has taken definite form. As late as 1862 Wagner asserted that there was no real difference between acute yellow atrophy and acute phosphorus poisoning.

The largest collection of cases of which I have been able to find an account is that of Legg, numbering just one hundred. Before this Lebert had gathered accounts of 72 cases and still earlier Freirichs had collected 31. In a long and varied experience, Bartholow has seen but one case.

In studying the pathological anatomy we find that the starting point of the inflammatory action instead of being in the connective tissue, as it is in cirrhosis, is diffuse, spending its greatest force on the hepatic cells of the lobules. These shortly undergo a fatty degeneration and softening so that if the liver be removed it will not retain its form when placed upon the table but will flatten out. If the organ be cut at this stage of the disease, the knife, instead of being stained with blood, is covered with globules of fat.

The bile ducts do not collapse but soon become obstructed by the softened epithelial cells and what bile is secreted is carried by absorption into the system and gives rise to jaundice, which only fades when the bile is no longer secreted. After about the ninth day the area of hepatic dullness diminishes. This symptom being the nearest pathognomonic of the disease of any yet noticed.

The prognosis in a well marked case of yellow atrophy is uniformly fatal. The disease may come on in either of two ways. The graver symptoms may be preceded by milder prodromes or they may appear at the outset. The former is more common, and there is absolutely nothing to tell the watchful physician that the loss of appetite, nausea, vomiting, bitter taste in the mouth, headache, and general malaise are not caused by a so-called bilious attack or a gastro-duodenal catarrh. The later development of the case will alone determine the nature of the disease. If the patient be suffering from acute yellow atrophy of the liver, these symptoms will persist for a period varying from a week to several months. Finally, the headache will become more intense, insomnia will manifest itself, a persistent dilatation of the pupils will be noticed, and at some period jaundice more or less marked is sure to appear.

By this time an examination will reveal a marked diminution in the size of the liver, which may go on till the gland is reduced to 1-3 its natural size. Increased headache, intense insomnia, extreme restless-

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ness, paralysis of the sphincters, jactitations, possible convulsions, wild delirium, coma, death, and the scene is closed.

The temperature range varies from a slight rise during the prodromic stage to 105 and 106 toward the end, the pulse keeping pace with the temperature.

Another very common symptom is a hemorrhage, usually from some part of the alimentary canal.

Occasionally the disease seems to be ushered in by the passage of a gall stone, but whether the calculus bears any relation to the disease or is simply a coincidence is a question still in doubt.

The spleen, the kidneys, the heart, in fact nearly all the organs undergo more or less change, so that while the disease is spoken of as an affection of the liver, it is really systemic with the most noticeable changes taking place in the liver.

Of the successful treatment of this disease, little can be said and less can be done. The treatment of the prodromic stage is that appropriate for an ordinary gastro-duodenal catarrh, while sodium phosphate, quinine, arsenic and astringents for the hemorrhages are the drugs to be used after the graver symptoms appear.

Thus having passed in review some of the salient points of this rare disease, I will read the notes of a case that I believe was one of acute yellow atrophy of the liver.

Wednesday, January 11, 1888, I was called to see Mrs. A. J., American, aged 50, mother of three children all living. I elicited the following history: For 25 years previous to the preceding Thursday the patient had enjoyed excellent health, never needing a physician except at confinement.

Toward night of Thursday, January 5 while sweeping, she was taken with a terrible pain in the epigastrium, radiating upward and to the right. She described this pain as cutting, tearing or knifing. It continued for a few minutes accompanied by slight vomiting, going as suddenly as it came on, and leaving the patient thoroughly exhausted and sore all over her back and abdominal regions. Friday, January 6, she was about the house but felt weak and sore. Saturday the experience of Thursday was repeated. Sunday was like Friday, except she was weaker. Monday there was a slight pain which soon passed off, but Wednesday came the worst paroxysm she had had, lasting about thirty minutes. During this I was sent for but it had passed before my arrival.

I found the woman prostrated by the pain, considerably nervous, pulse 90, temperature 100, tongue coated, a little nausea, complaining

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of a sore, scraped feeling in the right hypochondrium, extending through to the back so she could not lean back even against a pillow.

I diagnosed the passage of a gall stone and put the patient on sodium phosphate, one drachm T. I. D. with aromatic spirits of ammonia and compound spirits of lavender for the gastro-duodenal catarrah that evidently existed.

Physical examination at this time revealed no apparent change in the contour of the liver, and less tenderness than might have been expected.

The next day I found the patient feeling better. There was less soreness and no return of the pain, and I may say here that the pain did not return at any time during the illness.

Sunday, January 15, I found the patient markedly jaundiced, temperature 101, pulse 96, some nausea but no vomiting at this time or at any subsequent period. Her bowels were soluble, passing two or three loose stools during the 24 hours.

From this time till January 30 there was no marked change in the condition of the patient. She sat up more or less each day and walked about the room. The symptoms of a gastro-duodenal catarrh had become more apparent. Her appetite was very poor, temperature varied from 101 to 102½, pulse 90 to 108; all soreness gone except over the liver, which was repeatedly counterirritated.

Toward the close of this period the area of hepatic dullness was noticeably diminished. The frequency of the fœcal evacuations had slowly increased till at this time she was passing five or six liquid stools each 24 hours.

I now took away the sodium phosphate and put her on to camphor and lead of each one grain, every four hours. After taking three doses she developed a slight delirium and the opium was withheld. Her tongue at this time was somewhat coated, but at no time during the sickness was there any sordes. Tuesday, January 31, she was rational and visited with a brother who called on her that day, but Tuesday night she was quite delirious though she had taken no opiate to produce it, and about this time she began losing control of the sphincters, a trouble that now grew rapidly worse until all control was entirely lost.

Wednesday, February 1, I called Dr. Janes, of Waterbury, in council.

We found the paitient rational, feeling weak, no pain, but very restless, temperature 103¾, pulse 108, diarrhœa still continuing, and the succeeding night taking on a slight tarry appearance indicating a hemorrhage somewhere. The area of hepatic dullness was still diminishing.

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The Doctor advised continuing the counter-irritation of the hepatic region and the exhibition of small doses of Dover's Powder.

Thursday morning her temperature was 104½, pulse 120, very restless, delirium increased, diarrhœa better, area of hepatic dullness markedly diminished, no tenderness anywhere in the abdominal region except a little over the liver, no tympanites.

Friday morning I found every symptom aggravated and Friday night there was wild delirium, return of the tarry stools, but no tympanites or evidence of local or general peritonitis.

Saturday morning the patient was partially camatose. No hepatic dullness at all, no tympanites, death occurring about 11 A. M. Saturday, February 4. No autopsy secured.

I entered this case in my case-book under the caption "acute yellow atrophy of the liver," and I believe my patient died of that disease, and I very much regret that an autopsy could not have demonstrated the lesions that I believe existed.

I doubt not that as I have read these notes many of you have said "his case was very like typhoid fever," and so in many of its symptoms it was. I had that disease in mind all the time and hunted for it every day. A few days before calling Dr. Janes in council, I described the case to him and he spoke of typhoid but excluded it after examining the patient. He made the probable diagnosis of acute yellow atrophy and I think the later developments fully confirmed his belief as they did mine in the accuracy of his diagnosis.

NOTES IN CASE OF CLIF HALL.

By F. H. Cilley, M. D.

Was called to see him Monday, October 24th, 1887. He is 9 years old, well nourished, of an active mind. His history was as follows: Had been sick with a cold about one week (or what was supposed to be a cold), had had more or less headache, with a flushed face, nosebleed and vomiting by spells; he would vomit and his nose would bleed at the same time, face looked swollen, no desire for food, pulse 65 and a little irregular, temperature 98, tongue clean; gave one comp. cathartic pill and a powder of antifebrine for the head. October 25. No particular change in the case, thinks he feels a little better, symptoms all about the same. October 26. Was sent for in great haste just after noon. Found the patient in convulsions. I learned

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that he went into them about one o'clock, did not consider him any worse in the fore part of the day. There was no cessation in the fits till five o'clock, when all at once they stoped. I had been giving chloroform, and had given 1-8 grain of morphia hypodermically. Condition of patient at six, pulse 90, temperature 100 3-5; can be roused up but does not seem to realize much, came out about nine o'clock and knew those about him, but did not know that he had been so sick; rested very well through the night, had no more signs of the fits. October 27. Temperature 98 2-5. pulse 80, tongue coated a very little. Passed a large quantity of urine of a dark color, and upon being boiled showed the presence of albumen. No pain in the head or any part of body, rested very good through the day, no particular change in any respect, urine darker in color at night.

October 28. Rested very well through the night, temperature and pulse about the same as morning before. Temperature at night 99 2-5, pulse 90, mind clear in every respect, urine very dark and loaded with albumen, and the dark color supposed to be caused by blood, which was proven by the microscope. Had been taking Pot. Bro. gr. 10 every four hours, which was continued, and as the bowels had not moved for two or three days a comp. aloin pill was given, mild counter-irritation in the region of kidneys. October 29. Has had a good night, vomited once, otherwise rested well; still passes the almost black urine. Had Dr. Grinnell, of Burlington, last night in consultation. Temperature and pulse are about the same as yesterday. October 30. Had the best night since sick. Pulse 65, temperature 97 2-5. Used dry cups over the kidneys yesterday and to-day, tongue has a white fur; pill operated well yesterday and bowels loose to-day. Begins to call for food for the first time in two weeks. Urine not so dark and not so much albumen present. October 31. Temperature 97 3-5, pulse 85, had a good night, urine not as dark looking, and on testing not as much albumen. Bowels loose. November 1. Temperature 97 3-5, pulse 80. Urine showed just a trace of albumen; patient seems to be doing well, appetite good, sleeps well, skin moist when sleeping, bowels are inclined to be loose.

November 2. Temperature and pulse same as yesterday. Urine has a slight milky appearance when boiled in the test-tube, aside from that no trace of albumen. The bowels are in a normal condition, skin moist, sleeps well, and begins to want to eat more. November 3. Patient about the same as yesterday, urine looks all right, should say from looks that it is perfectly normal. November 4. Patient still on the gain, urine looks perfectly natural, Sp. Gr. 1015, did not test

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for albumen. He eats well and everything he has eaten so far seems to set well on his stomach, does not complain of a pain or ache in any part of his body.

NOTES ON ALBUMINURIA.

By A. B. Bisbee, M. D.

It has long been known that some apparently healthy persons may pass albuminous urine continuously for many years without developing symptoms of renal disease, and that in a still larger number of persons a temporary albuminuria may be excited by slight causes, but these facts seem to have been regarded in the past as of very little practical value and to have lessened in no way the importance usually attached by physicians to this symptom as ordinarily met with in practice.

Ever since Richard Bright drew attention to the relationship existing between albuminuria and the kidney affections which are now associated with his name the idea has very largely obtained that albumen in the urine is an almost infallible indication of serious organic disease of these organs, and the possibility of its occurrence unassociated with such diseases, until recently has not been seriously considered. Dickinson defines Bright's disease as follows: "Those diseases which are made known during life by the presence of albumen in the urine have been classed together under the general term 'Bright's disease.'"* In the nomenclature adopted by the Royal College of Physicians the two terms albuminuria and Bright's disease are given as synonymous, and the common practice of hinging a diagnosis of kidney disease on the presence of this one symptom alone has generally been considered warrantable.

With the advent of a more thorough clinical study of the urine, however, it has become apparent that it is unsafe to run away with the idea that albumen in the urine is always evidence of pathological changes in the kidneys or the "signal for an alarming prognosis."

On the one hand, it has been shown that while albuminuria may be a symptom of Bright's disease it is not essential to it.

It is now a well-known fact that some cases of chronic diffuse nephritis, the most fatal of all the diseases of this group, may pass through

* "Treatise on Albuminuria," 1881.

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their entire course to a fatal termination without the presence of albumen in the urine at any time.

On the other hand, it is equally certain that albuminuria frequently occurs without any evidence whatever of a kidney lesion as a symptom of a great variety of morbid conditions outside the kidneys, and also when no disease can be detected.

While, therefore, albumen in the urine may justly be considered a valuable indication of many forms of kidney disease, it must be remembered that every case of albuminuria is not one of Bright's disease, but that this symptom is sometimes produced by pathological changes in other organs of the body, and that if the results of recent observations are to be accepted, an amount of albumen sufficient to be detected by the ordinary tests appears in the urine not infrequently under conditions compatible with perfect health.

In life insurance examinations made by Dr. John Munn* the heat and nitric acid test revealed the presence of albumen in 11 per cent. of the cases, while casts or other evidence of renal disease were present in only two cases.

Clement Dukes, physician to Rugby, and others have found albuminuria unassociated with kidney disease very common during adolescence, arising from slight causes, as sudden changes of temperature, errors in diet, etc.

In very careful observations made on healthy soldiers and school children, 700 persons in all, a French observer (Chateaubourg)† found a considerable amount of albumen in 64 per cent. of the cases; a trace in 84 per cent.

The principal test used was the double iodide of mercury and potassium.

Grainger Stewart, an authority in urinary diseases, estimates that nearly one-third of the population pass albuminous urine. He examined the urine of four hundred and seven healthy persons, with nitric and picric acids, and found albumen in 31 per cent. of the cases.

In 205 soldiers,	- - - - - - - - -	37.66 per cent.
" 74 civilians,	- - - - - - - - - -	10.08 " "
" 40 pauper children,	- - - - - - - - -	17.5 " "
" 40 adult paupers, about 60 years of age,	- - -	67.5 " "

He draws the following conclusions:

"That albumuinuria is much more common among presumably healthy people than was formerly supposed.

"That its frequency increases as life advances.

**Medical Record*, XV, 297.

†*Boston Medical and Surgical Journal*, CX, 556.

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"That it is more common among those whose occupations involve arduous bodily exertion than those who lead easy lives."

It must be admitted, therefore, that albumen sometimes makes its appearance in the urine when no serious disease exists, and it is important that the characteristics of this form of albuminuria be thoroughly understood so that it may be distinguished from the graver forms due to renal disease. Perhaps its most striking feature is the intermittent character of the albuminuria. It has been found that there is a period in every day when no albumen can be detected. In some cases it appears only after exercise. In others only after meals, but in the larger number of instances the urine passed on rising in the morning is free from albumen, while later in the day it appears in varying amounts.

This tendency to a periodical recurrence of the albuminuria is of service in excluding a kidney lesion. Although in many, perhaps the majority of cases of chronic Bright's disease the amount of albumen in the morning is much less than is excreted later in the day after food and exercise, a careful examination usually reveals the fact that it is at no time entirely absent. There are some cases of early kidney disease, however, which are attended by an intermittent albuminuria, so that the absence of albumen from the morning urine cannot be regarded as positive evidence of cyclic albuminuria.

The presence of tube casts is an important but not an absolute diagnostic sign of disease of the renal organs. Numerous cases have been reported where these bodies were temporarily present in the urine, and later events proved that no such disease existed. Austin Flint relates the case of a perfectly healthy girl, fourteen years of age, in whose urine both albumen and casts were accidently found. After a time they both disappeared, leaving no bad results.

For practical purposes, however, casts may be considered strong proof of kidney disease as against simple albuminuria.

In simple albuminuria the amount of urine and urea execreted in twenty-four hours is normal.

In all forms of Bright's disease, on the other hand, the amount of urea is lessened, usually early in the course of the disease, and the daily quantity of urine in some cases exceeds the physiological limit, while in others a diminished quantity is passed.

In simple albuminuria there is no cardiac hypertrophy, no increased arterial tension, no dropsical effusion, no changes in the retina.

The prominent symptoms of this form of albuminuria were well developed in a case which has been under my observation for several months past.

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My patient is a barber, thirty-six years of age. Family history unimportant, except that his father died dropsical at the age of sixty-five. Whether the dropsy was of renal origin or not I was unable to determine. The personal history of the patient was excellent. He had always been in good health when albumen was first found in his urine, in 1886. Previous to this time he had occasionally noticed a sediment in his urine, and having gained the information from some quack document that this was of serious import, he had several times brought me specimens of his urine for examination. He had invariably brought me morning urine, and nothing abnormal was found except an excess of urates. August 6, 1886, he gave me some of his urine passed in the evening after a day's work, and much to my surprise, it contained a considerable amount of albumen. There were no casts, no sugar; amount of urine and specific gravity normal; no evidence of local disease of bladder or urethra. He was slightly anæmic, but there was no tendency to œdema; no cardiac hypertrophy. He considered himself to be, and passed among his friends as, an ordinarily well man.

The next day I examined two specimens. In the urine passed on rising, I was unable to find even a trace of albumen, while, in the evening, a considerable amount was again found. Further examination revealed the same condition every day—albumen at night, none in the morning. An exclusive milk diet had no effect on the amount of albumen excreted; neither did rest from business.

Since that time he has kept along with his business, passing albuminous urine a certain portion of each day, with no appreciable impairment of the general health.

August 10, 1888, two years after albumen was first found in his urine, I examined four specimens. On rising at 6 A. M., there was no albumen. An hour later, after breakfast, there was a distinct trace. At 11 A. M., a still larger amount, while at 4 P. M., the proportion of albumen was about one-sixth.

In none of the specimens could casts be found. The amount of urine and of urea was normal.

A few oxalate of lime crystals were seen.

About September 1, the patient had symptoms of gastric derangement, and his urine, although less highly albuminous, was found to contain a few hyaline casts. At no other time before or since have I been able to discover casts in his urine. The gastric symptoms disappeared in a day or two, and at present the patient is as well as usual.

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I have regarded this as a case of cyclic or functional albuminuria for the following reasons:

The general health of the patient remains unimpaired.

The albuminuria is intermittent. Tube casts are absent, having been found but once in the two years of albuminuria.

The amount of urea is normal. There are no evidences of cardiac hypertrophy or increased arterial tension.

Grainger Stewart says: "The distinguishing features upon which I would insist are the quantity of urea, the presence or absence of tube-casts, and the condition of the pulse and heart. These will indicate whether simple albuminuria or organic disease is present, and if these indications are favorable, I would give a hopeful prognosis*

Dr. Jamos Tyson,† in a recent article on the Relation of Albuminuria to Life Insurance, gives as his opinion that persons passing albuminous urine are eligible to insurance if by a reliable examination it can be shown that:

1. The applicant is otherwise in good health.

2. There are no tube-casts.

3. The specific gravity of twenty-four hours' urine is not below 1015-25.

4. There is no hypertrophy of the left ventricle or increased vascular tension.

5. The age of applicant is below 40.

6. There is no evidence of gout.

7. There are no retinal changes, such as are associated with nephritis.

Causes.—The influence of muscular exertion in the production of albuminuria has received considerable attention, and it now appears to be a well-established fact that prolonged or excessive exertion will render the urine of some persons albuminous.

A large number of healthy soldiers were examined in the morning, and the urine found to be normal; after a five hours' march 19 per cent. had albuminuria.

In the urine of the pedestrian, Weston, both albumen and casts were found.

Griswold reports the following very interesting case: A gentleman applied for a policy in the New York Life Insurance Company, but was

American Journal Medical Science, January, 1887.

†*Medical Record*, September 22, 1888.

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rejected because his urine, which was examined in the afternoon, just after he had been taking a boxing lesson, was found to contain albumen.

The following month he was persuaded to apply for insurance in another company, and on this occasion he was accepted, as no albumen was found in his urine, and he was otherwise in excellent condition. Having mentioned that albumen had been found in his urine a month previous, however, several very careful examinations were made, and one of them revealed the fact that the urine was not only highly albuminous, but also contained both fatty and granular casts. This examination, like that in the other company, was made in the afternoon, just after the applicant had taken a boxing lesson, and in consequence of the condition of his urine he was again rejected. He then consulted Dr. Janeway in reference to his urine, but the latter examined twelve specimens of it in succession without finding anything abnormal about it whatever.

He then inquired what he had been doing before passing the urine in which the albumen was found by the life insurance examiners, and learning of the boxing, he secured specimens passed for several successive days after taking the exercise, and found albumen and casts in them all.*

Grainger Stewart, after extensive observations directly bearing on this point, concludes "that moderate muscular effort rather diminishes than increases the albuminuria; that it is often induced by violent or prolonged exertion."

It is also believed that diet may act as a causative agent. In any form of albuminuria, whether the result of kidney disease or not, taking food usually increases the amount excreted, and it has been found that the introduction of any kind of food into the stomach will render the urine of some susceptible persons albuminous when it is at other times normal.

The case of a physician is reported who found his urine to be albuminous after breakfast and the midday meal, none at night, and only during the summer months. Before these meals his urine would be entirely free from albumen, but as soon as food reached the stomach the albumen began to be excreted. The kind of food, whether farinaceous or albuminoid, made no difference. Even milk would produce it.

In other cases, certain articles of diet, as lobsters, crabs, cheese, or

* *Boston Medical and Surgical Journal*, CX, 538.

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large amounts of albuminoids will excite it. Barreswell passed albuminous urine twenty-four hours after eating ten eggs.

Fothergill asserts that "if two or three raw eggs are taken at once, albumen makes its appearance in the urine."* Further experiment, however, has shown that this is by no means true in every case, but that very large quantities of eggs may be taken without the production of this symptom, and that in order to render the urine albuminous the amount of albuminoids must be sufficiently large to overtask the digestive powers, when "the egg-albumen will pass unchanged into the blood and be excreted by the kidneys."

There are many cases of albuminuria due to gastric or hepatic derangement. This is evidenced by the fact that an appropriate treatment for these disorders affords complete relief from the albuminuria. Murchison says: "So often have I observed albuminuria associated with hepatic disorder, which has disappeared completely and permanently when this has been set to rights, that I have little doubt that we have in the liver a cause of albuminuria to which attention has not yet been sufficiently directed."

Dr. George Johnson has drawn attention to the influence of cold bathing in the production of albuminuria, and nervous excitement is mentioned by others.

Dr. E. G. Janeway relates the case of a broker whose urine during business hours was loaded with albumen, while early in the morning or at night none whatever could be found.†

Significance.—What is the significance of the albuminuria in these cases? Is it entirely non-dangerous or is it simply the initial state of serious kidney disease? This certainly is a very important question.

On the one hand, if it is devoid of danger, the physician should not be led into the error of giving a prognosis which will unduely alarm the patient, and which the subsequent course of events is sure to prove to be faulty. On the other hand, if cyclic albuminuria is but an early manifestation of renal degeneration much can be done to prolong life by careful attention to diet and hygiene.

At present, it seems impossible to give a satisfactory answer to this question, but there can be no doubt that some of the cases eventuate in kidney disease.

The case is reported of a prominent English physician, who for a long time passed albuminous urine only occasionally after exercise, but finally the albuminuria became continuous, and the patient died uræmic.

* "Indigestion, Biliousness, and Gout," 220.

† *Boston Medical and Surgical Journal*, CX, 539.

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Many physicians believe this to be the usual termination of these cases. Accepting the doctrine of Semmola, that the repeated passage of albumen through the kidneys induces structural changes in those organs, they hold that albumen in the urine in any amount is a dangerous symptom. Robert T. Edes says: "It is the almost unanimous conclusion of practical writers, taking fully into account those recently ascertained facts of albuminuria in alleged health, that the presence of albumen in the urine in sufficient quantity to be detected by any of the ordinary tests is a decidedly serious symptom.*"

It is the opinion of the majority of the observers, however, that while some cases terminate in kidney disease, in many others no such result is to be feared, and instances are cited where albuminuria is known to have persisted many years with no bad results.

It has truly been said that, "regarding the significance of albuminuria the profession seem to have passed from a position of partial knowledge with confident assertion to one of doubt and research."

SEPSIS IN OBSTETRICS.

By GEORGE DUNSMORE, A. M., M. D.

The word sepsis is, I believe, derived from the Greek word *septos*, meaning putrid or poisonous. For putrefaction to take place it has always been claimed that its requisites were dead animal tissue, heat and moisture, and nothing more.

While it is still claimed that heat and moisture are factors, and essential factors in the decomposition of dead animal tissue, it is further claimed that they are not the only factors. It is asserted that the great factum factotum is that the essential factor in this process is an invisible factor. Its generic name is microbe. Its dwelling place is among men, and its residence creation. Like the Eternal, it fills immensity, and we see it. Our tympani do not vibrate to the rustle of its wings, nor do our olfactories warn us of its approach. Would you escape it by taking the wings of the morning and fleeing to the uttermost parts of the earth? Sir, there is no nook or corner in this vast universe where microbes do not exist. Its species are innumerable, and its power of reproduction beyond all calculation.

* "Pepper's System of Medicine," Vol. IV.

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You are, at this moment, surrounded by millions on millions of them. The air you breathe is full of them. Your mouth is lined with them, and your skin is covered with them. No abraded surface, we are told, no matter how minute, can escape their argus eyes. They are not scavengers. Unlike the turkey buzzard, they do not eat up, and so remove, all that is putrid and bad in the animal kingdom. Their mission is to render that bad which was good, in other words, to engender bad blood. This, gentlemen, is a condition, as well as a theory, that meets us on the very threshold of obstetrical practice.

Within fifteen years the gray-headed physician and the newly-fledged doctor alike dreaded the mechanism of labor; they dreaded also the eclampsia and hemorrhagia which sometimes accompanied it, but they never for a momemt supposed that they were themselves the carriers of a foe more insidious and deadly than either fits or hemorrhage.

But, sir, we of to-day, who live in the latter part of this nineteenth century, have learned—may I say to our sorrow —that this is true.

It is, perhaps, safe to say that within the last decade the theory of puerperal fever, whether it assumed the form of peritonitis or metritis, was believed to be the result of blood poisoning.

This blood poisoning was not supposed to be due to telluric or atmospheric causes, but to the absorption through the uterine veins of some morbid product.

This product might be a blood clot, a membrane, or a portion of a retained placenta, which had undergone decomposition.

To-day we are told that a blood clot, a portion or even the whole of a retained placenta, can do no harm *per se*.

To be hurtful it must be infected with microbes or their virus. And what adds to the danger of infection is the fact that any and all microbes bear upon their person that peculiar poison which produces puerperal fever.

In typhoid fever we have the typhoid bacillus, which alone can produce typhoid fever; then we have bacillus of diphtheria, of malaria, of leprosy, of anthrax, and so on, each producing its kind.

But here, in this disease, it makes only a difference in the degree of malignancy whether the cocci are heterogeneous or homogeneous. If there are any of any kind around the body of your patient you can have no assurance that she may not contract puerperal fever. As I understand it, the material rendered poisonous by the microbe is not absorbed by the open veins of the uterus, but by any raw surface it may chance to come in contact with. The conclusion then is legitimate: no raw surface, no danger from microbe. Then, again, no microbe, no danger

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from raw surface. This is the theory of Semmelweiss and his colaborers, and is corroborated by many of the leading medical minds of this country as well as by many of its medical journals. As no man is so great an adept in the art of delivery as to be able to give his patient any positive assurance that she will entirely escape laceration or abrasion of the genital organs, it is a duty he cannot shirk to see that her body and surroundings are rendered aseptic.

According to this theory the lying in woman needs the same protection from micro-organisms as her sister on whom is to be performed ovariotomy or laparotomy.

It simply places obstetrics and surgery on the same plane.

While it is admitted that these pests are everywhere, it is said they congregate in greater numbers in some places than in others.

In the vicinity of the genitals of the lying-in woman and on the hands of the accoucheour, especially under and around the finger nails, are they said to be found in the greatest numbers.

This being the status of things prior to delivery, how shall the patient and her surroundings be rendered aseptic?

Ask the young M. D., fresh from college, the gray matter of his brain infiltrated with the teachings of Koch, Pasteur, and others, and he will tell you. As he begins to tell you he has a call—Mrs. A needs his services immediately. It is his first case. Let us watch him, and learn the lesson of asepsis.

In addition to the ordinary armamentum of instruments, ergot, chloroform, etc., we see him put into his satchel a quart of a 2 per m. sol. of bichloride, an equal quantity of a 10 per cent. sol. of carbolic acid, a uterine syringe, a large sponge, a spray apparatus, and a pound of sulphur.

Thus equipped, he hastens to the domicile of Mrs. A. Her home is in the country; her husband is a well-to-do farmer. She is a primipara. Many of the neighboring women are there—some to lend their aid and sympathy to the lying-in woman, and some to see the new doctor. The doctor, having been introduced to all the ladies present, and having become satisfied as to the nature of his case, immediately orders hot water for a bath. The patient naturally asks who the bath is intended for.

For you, madam, quoth the doctor.

For me! It was only yesterday that I took one; none needed here, doctor. But the suavity and the logic of the doctor are plied, and the woman sees her extreme danger, and the bath is ordered. While the water is being heated he takes an iron basin, sets it in the middle of

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the room, throws into it a handful of his sulphur, and sets fire to it. As this burns, he adds a little more, and so on until it is all consumed.

In the meantime he has ordered all the clothing to be used on the mother and infant, all the sheets and bedclothes used on the bed, to be hung up in the room that they may receive the full benefit of the fumigation. Now we see him charge his spray apparatus with his 10 per cent. sol. of carbolic acid, and the water for the bath being ready, he intrusts the apparatus to the most resolute looking woman in the room, with positive instructions to spray every part of the room—ceiling, walls, carpet, mattress on both sides, bedstead, and more particularly under the bed, and in the corners of the room. Being now satisfied that his instructions will be fully carried out, he takes the quart of 2 per m. sol. of bichloride and the large sponge in one hand, and the lying-in women in the other, and hies him to the bath-room. Unfortunately for us, but fortunately for the modesty of his patient, he shuts the bath-room door. While we cannot see now what is going on in that bath-room, we can safely surmise that that woman never got such a scrubbing before, and that she hopes that she will never get such an one again. 'But 'tis done, flesh brush, soap, water, and bichloride have all been used, and the woman, dressed in clean, aseptic clothes, reenters the lying-in room and is seated in an aseptic chair. The doctor, after a little examination, being satisfied that the spray apparatus had done its work well, orders the bed made up and the woman placed in it.

At this moment the door opens, and in steps a rather prepossessing, buxom maiden of thirty or more summers. That she is a woman of determination no one will question who has ever looked in her face. If there is anything in regard to the management of woman, whether in the lying-in or lying-out state, that she does not thoroughly understand, you can rest assured that that something has never been revealed to mortals. This woman is the nurse. She has just arrived, having driven ten miles in the last hour. The reason for so furious a ride was that, not being present at the delivery in the case she had just left, the woman consequently made a very slow as well as bad recovery, and knowing that this was an inexperienced, young doctor, she wished to give him some invaluable points in the management of such cases, and at the same time throw the protecting ægis of her skill over this case from its inception. Here is a woman just in from an infected room, with her hands dripping, so to speak, with microbatic gore, and she to be the nurse of this woman.

Great Scotland, what a predicament! What a prospect!

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This woman must be disinfected, and that thoroughly. Will the doctor's severity and logic prevail in this case? Let us see.

He takes her into the further corner of the room yonder. They are talking in an undertone, and you cannot catch a word. See, she squirms and stamps her foot on the floor with no uncertain sound. Is she objecting to the bath, or is she annoyed by the sulphur fumes? I cannot tell. She is becoming more restless; the noise is increasing; it disturbs the patient; the doctor sees it, and takes the nurse into an adjoining room, and shuts the door. What is happening in there is known only to the doctor, the nurse, and the microbe. Well, what next?

Soon the door opens, and single-handed and alone the doctor re-enters the lying-in room. He looks flushed and worried, but soon recovers his composure and sprays himself thoroughly with the carbolic solution, cleans with great care his finger nails, and then washes his hands, face, head and neck in 2 per m. sol. bichloride. He then picks out two of the visiting ladies to assist him. These he sprays and furnishes with some of his 2 per m. sol., with instructions to wash in it their hands, neck, and faces.

But not for a horse would he attempt to give another nurse a bath. The other ladies he kindly notifies that should he need their services he will send for them. Thus has he reduced the danger of microbatic infection to the lowest possible minimum commensurate with the necessities of the occasion. Having thus prepared the way, our young friend sits down to rest and abides the onset of labor. It comes and proves normal and easy, with neither laceration or abrasion. The child is born, the cord ligated, and the mother happy. But our friend is not as happy as he might be. He has waited just half an hour to see how a placenta looks, and yet cannot tell. He gives ergot again and again, uses traction on cord, manipulates the abdomen, but all to no purpose. An hour, an hour and a half passes, and yet no afterbirth. He is uneasy, and who blames him. What shall he do? He knows that with all his ante-delivery caution and the post-delivery caution, which he is going to use, there can be no possible harm in allowing it remain to until nature expels it. He knows, too, that it is almost as dangerous procedure to-day to introduce the human hand into the uterus, as it would be to perform the Cæsarean section.

On the other hand, it would look like a more finished job if it was in the pot. And leaving it in the uterus might get up a neighborhood talk that would ultimately militate against the reputation of the young doctor. Then knowing, as he does, that the country is full of ignorant

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doctors, some of them would be almost sure to call it malpractice, and possibly swear so. Thus, he allows policy to outweigh his better judgment and decides to remove it. Let us watch the operation. He is posted and will do it well. First he renders his right hand and arm to the elbow aseptic, and anoints it with carbolized oil. Then seeing to it that his uterine syringe is free from micro-organisms, he injects with it into the uterus four ounces of his 2 per m. solution. Then he introduces his hand, keeping, as far as possible, his fingers within the membranes and removes the placenta. This done, he injects another four ounces of his 2 per m. solution into the uterine cavity, and his work is done.

Mr. President, it seems to me, sir, that our responsibilities increase rather than diminish with every additional ray of light that science flashes across our intellectual vision. If the theory of blood poisoning by the microbe is true, no antiseptic treatment can be too thorough. Do what you may, or have done what you will, I care not how indecorous it may appear, you are justified in it, if it is only in the line of asepsis. Not merely every noble instinct of our natures, not merely the high demands of our professional honor, nor the glory that is born of success, but self-protection demand that we put forth every effort in our power to protect our patient against this unseen army of microbes.

With this theory of puerperal fever and its prophylactic admitted, you are and ought to be as liable in a suit for malpractice, in case of the death of your patient where you failed to prescribe the known antidote, as you would be in a case of deformity resulting from a fracture which you, through ignorance or neglect, had failed to reduce.

Already do we hear of a case. The *London Hospital Gazette* gives a case in these words: Mr. W. Walker, Surgeon, of Wilmington, County Durham, finds himself in a very unpleasant position through the untoward death of one of his patients in childbed. According to the independent medical testimony given at the Coroner's inquest, death was the result of blood poisoning following laceration, and it was suggested that Mr. Walker's treatment was not altogether what it should have been. Although the Coroner said he hardly thought the case ought to go to trial, the jury returned a verdict of manslaughter against Mr. Walker.

Now, where Mr. Walker erred in his treatment the article does not state, but it could only have been in his prophylaxis. It is not claimed that there is any specific mode of eliminating the poison after it is introduced into the system. Our hope and only hope is in our prevention.

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If you cannot prove that your preventive treatment was all that it should have been, you will be in the same box with Dr. Walker. Do not flatter yourself with the idea that this theory is known only to a select few. The secular papers are as pregnant with the disease bearing germs as the atmosphere itself. It is the theory of to-day, and, better still, it is a new theory, and what is new is always accepted by the laity and too often by the profession.

When on trial in a malpractice suit of this kind, you might swear that you did not believe the theory to be correct, or that it would stand the test of experience. To corroborate this view, you might affirm that you had practiced midwifery for thirty years—that you had delivered 1,200 women, and had only lost three from blood poisoning—that in one hundred of these cases there was more or less laceration of the perineum, and although you now know that microbes in great numbers must have been sitting, standing, or lying on the very edge of these rents, yet not one of these women suffered from blood poisoning, although no germicides were used. You might go further and assert, without fear of contradiction, that had the remaining 1,100 been sent to a city gynecologist for examination as to the uterine, rents in one-half of them they would have been found. You might add that your patients had been among the rich, the poor, the clean, and the uncleanable, and yet in the latter class you had lost but one, while in the former two.

You may now bring in a small army of country doctors who will swear to an experience similar to yours, and yet all this will weigh for nothing against the evidence of such men as Ahtfeld, Semmelweiss, Koch, Pasteur, and others, who have not only seen microbes and the spores from which they proliferate, but have experimented with them to the satisfaction of scientific men everywhere.

I must admit, Mr. President, that the study of the Microbe makes me nervous. It requires me to do that which I cannot do, and which you cannot do.

Labor-pains are not accommodating enough to meet the antiseptic requirements of this hour of filth-producing germs. You may cry to the pains hold, hold, till I kill the microbe, but they heed you not.

The cry of the woman for help demands your absolute and undivided attention, though millions upon millions of micrococci infest her and you.

Is it not more than probable that in the next decade *we* will be laughed at for following this Will-o'-the-wisp.

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THE ANATOMY, PHYSIOLOGY, AND THERAPEUTICS OF THE PHARYNX.

By A. C. Bailey, M. D.

Gentlemen of the State Medical Society:

The almost universal prevalence of post-nasal catarrh in this country has given rise to much speculation among specialists, and many views have been advanced as to its etiology and treatment.

Among the whole list of diseases that ever infect the human race in this particular part of the country, none more frequently come under the observation of the general practitioner than inflammation of the pharynx, or some of the openings communicating with it. The irregular climate of this country renders it of frequent occurrence, and, although its symptoms are seldom of sufficient intensity to require medical aid, it assumes great importance in the mind of the medical man, from the fact that it is from oft repeated attacks, liable to become chronic and to cause, by continuity of tissue, a catarrhal state of the eustachian tubes, larynx, and œsophagus, posterior nares and bronchial tubes; and the chances of entire resolution become greatly diminished, and the normal tone of the whole system becomes largely decreased in consequence, and so permitting more serious diseases to ravage this, the soul's house of dust.

ANATOMY.

As generally considered, the pharynx is that part of the alimentary canal which is situated behind the nose, mouth and larynx, between the naso-pharynx, which extends to the level of the soft palate above, and the laryngo-pharynx, which begins on a plane with the greater cornua of the hyoid bone and extends to the lower border of the cricoid cartilage below.

In contradistinction to the naso and laryngo-pharynx, it is sometimes called the oro-pharynx. The pharynx is about four inches and a half in length and its breadth about one and a half inches. It is broader in the transverse than in the antero-posterior diameter. The side of the pharynx is connected with the posterior half-arch, which extends from the posterior aspect of the soft palate on each side, and is formed by the fold of the mucous membrane covering the palato-pharyngeus muscle. These folds are sometimes called the posterior pillars of the fauces, in contradistinction to the anterior pillars which are formed by the

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palato-glossus muscle, and extend from the anterior aspect of the soft palate to the side of the tongue. Posteriorly, it is connected by loose areolar tissue with the cervical portion of the vertebral column, and the longi-colli and recti-capitus antici muscles; anteriorly it is incomplete, and is attached to the lower jaw, tongue, hyoid bone and larynx; laterally, it overlies the carotids and the internal juglar veins, the pneumo-gastric and eighth pair of nerves, lymphatics and ganglia. It has seven openings communicating with it; the two posterior nares, the two eustachian tubes, the mouth, larynx and œsophagus. The pharynx has three coats, the mucus, fibrous and muscular. Its epithelium is of the columna ciliated and squamous varieties, and compound follicular glands are distributed in large numbers over its surface, and the racemose, which are very numerous at the upper part of the pharynx, and across the back of the fauces, between the two eustachian tubes. The blood supply is derived from the ascending pharyngeal branches of the external carotid, and the ascending palatine branch of the facial artery. The nervous supply is from the pharyngeal plexus, branches of the pneumo-gastric nerves, and the spheno-palatine ganglion. The soft palate is connected with the surrounding parts by means of the tensor palati, levator palati, palato glossi and palato-pharyngeus muscles, and is covered on both sides by mucous membrane. It is supplied with racemose glands, in front. The uvula is covered by a thick layer of mucous membrane. The tonsils are two almond-shaped bodies lying between the anterior and posterior pillars one on each side. Each tonsil is about three-fourths of an inch in length and one-half inch in width. The surface of the tonsil is covered with pavement epithelium, and is studded with from twelve to fifteen depressions, the lacunæ, which penetrate into the gland and are covered by reduplications of the mucous membrane and thickly furnished with follicles.

PHYSIOLOGY.

The physiological functions of the oro-pharynx are principally concerned in the process of deglutition, which, though a continuous act, may be divided into three stages. The first stage is the thrusting of the food through the isthmus faucium; this being a voluntary act may be of long or short duration. The second stage is the passage through the upper part of the pharynx, and since it is a region common to both food and air, it must be as rapid as possible. The third stage is the descent through the grasp of the constrictors, and the food having now passed the orifice of respiration, its passage may again become slow. The contraction of the constrictor muscles, underneath, propels the

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bolus down in the direction of the œsophagus, while the follicular glands serve to lubricate it so as to facilitate its passage to the stomach. The soft palate acts as a valve which closes the isthmus tightly during deglutition, to prevent the ascent of the food into the posterior nasal cavity. In phonation, the soft palate also holds an important position; its close relation to the pharynx giving or depriving the voice of nasal intonation. Purity of voice and enunciation, depend largely upon the condition of the nasal cavities and of the soft palate, and require the absence of all obstructions of the former, or of any condition interfering with the free motion of the latter. The uvula serves to close up tightly what interval might exist between the edges of the soft palate and the pharynx, when they are pressed together. In the normal state, the pharynx is pinkish in color, streaked with patches of lighter hue. Thin blood vessels may be seen crossing it from side to side obliquely, while its surface is studded with minute monticules about the size of a pin head, formed by the underlying glands. The anterior and posterior pillars, when normal, should appear sharply defined, and be of a pale-yellowish pink hue. The uvular is of the same color.

THERAPEUTICS.

The first essential in the successful treatment of the pharynx or any of the passages or cavities leading therefrom, is cleanliness. It is of so much importance, that its proper observance is sometimes sufficient to bring about a cure without the assistance of remedies. This is especially the case when the inflammatory process is kept up by constant exposure to an atmosphere loaded with irritating substances in such quantities as to overwhelm the normal functions of the ciliæ of the ciliated epithelium, and so interfere with the action of the glands.

Generally however, it only forms a part of the treatment. When the patient presents himself, his trouble, in most cases is of long duration, and inflammatory changes have taken place giving rise to hypertrophies, deep or superficial ulcerations, etc. The hypertrophy by interfering with the discharge of the secretions causes their accumulation in the recesses of the cavities where by the evaporation of their watery constituents they become converted into fetid crusts. The scabs and discharges of a more or less purulent form are irritating and a constant menace to the surrounding portions, taint the patient's breath and prevent the proper application of medicines to the ulcerated spots. Cleanliness is heaven's first law, and it is as applicable as it is important in this connection. It enables the medicament to come in direct contact with the diseased surfaces, this being further assisted by drying the sur-

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faces with absorbent cotton immediately before each application. This precaution neglected and the results are very much less satisfactory because the medicine does not reach the diseased membrane. The most common, but not the most effective method of cleansing the posterior oral cavity is by gargling. When only the soft palate or tonsils are to be reached much benefit may follow this method of treatment for the reason that the tonsils are rotated forward while the gargling is performed; but when the posterior surface of the pharynx is to be reached no benefit whatever is procured for it is completely closed off. Properly conducted, however, gargling may be of excellent service. Another method by which the throat and nasal passages are sometimes medicated is to draw the medicine up from a tumbler or snuffed from the palm of the hand. The latter in my experience produces more harm than good. The force necessary to be used to snuff from the hand into the nose causes so much irritation that the cleansing of the surface by the fluid does not compensate for it. The less the power by which the fluid is forced through the nasal cavities or into the pharynx, provided it reaches all the parts desired, the better the results obtained.

The douche and the atomizer are in most cases greatly to be preferred in the treatment of the diseases of the pharynx, or any of the passages leading therefrom. Some prejudice has arisen in the minds of some against the use of the douche, from the fact that sometimes severe inflammation of the eustachian tubes has taken place in connection with its employment. But by carefully observing a few conditions no serious results need ever come from its use. First, the fluid used must be as nearly as possible of the same temperature as the blood, to prevent the same effect as exposure to cold, when the mucous membrane is exposed to the atmosphere following the application. The relative difference between the usual heat of the nasal cavities, and that of the air, must be maintained as far as possible. Second, holding the vessel on a plane with the forehead so that the force of the stream shall not be too great, or powerful enough to penetrate into any of the surrounding cavities, should there be any obstruction to the proper egress of the liquid. Third, in order that the eustachian tubes shall not be penetrated, instruct the patient to avoid swallowing while the douche is being used, since the act of swallowing induces temporary dilatation of the tubes. Fourth, liquids of an alkaline character should be used, or should be made to imitate as far as possible the secretion of the mucous and serous glands. Fifth, the perviousness of both the anterior cavities should be ascertained, and no more liquid thrown in than can readily pass out, lest the fluid regurgitate into the mouth and perhaps

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into the larynx. Sixth, the head should be tilted forward as much as possible so that if any fluid should regurgitate, it can find immediate escape through the mouth without endangering the larynx.

In the treatment of the pharynx, the atomizer is far the best instrument to use. Having depressed the tongue so as to expose the whole pharynx, the spray can be thrown into every portion of it. If the patient breathe through the mouth, the soft palate will be forced forward so as to expose the adjacent parts to a better advantage. After thorough irrigation, the surfaces should be wiped off with a piece of absorbent cotton, held in the grasp of a forceps, immediately after which the medicinal application should be made. For the application of solutions to limited portions of the pharyngeal cavity, the cotton pledget and the brush are more convenient and just as satisfactory, care being taken to see that the brush has no loose hair which may become detached and cause the patient to cough. Care should be exercised to not take up too large a quantity of the fluid used as it is liable to run down in the larynx where it may cause cough and very annoying sensations. Inhalation of medicated steam is a very effectual method for treating the pharynx and tonsils. Powders applied to the throat by means of a brush or insufflator to cover the diseased portion, is another very good method of treatment. It is objectionable in the case of children, as the patient should not breathe during the application, and should avoid swallowing for a few minutes after, that the powder may be dissolved in situ. As to the agents employed in the treatment of the pharynx or nasal passages, they should be limited to those which, if accidently swallowed, would cause no deleterious effects. The cleansing solutions which would be used in the treatment of the pharyngeal cavity can also be used for the nose. In my experience, for all ordinary cases, only a few agents are necessary to be brought into use. Much stronger solutions can be used in the pharynx than can be used in the nose. Soda bicarbonate, soda biborate, ammonii chloridum, sodii chloridum in the strength of from four to eight grains to the ounce are very effectual, all of them being slightly astringent and mildly stimulating, also antiseptic. Potassii bromidi, fifteen grains to the ounce, is valuable when slight anæsthesia is desired. Potassii chloridum, one drachm to the pint, is very valuable in acute troubles. These agents possess properties which should be taken advantage of in a secondary way. When there is simple congestion, mild stimulation is of benefit, when chloride of ammonium will assist the treatment. If there is hypertrophy of the parts and stimulation is contra-indicated, bicarbonate of soda would come in play, on account of its non-irritating char-

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acter. In cases in which the discharges are offensive, the biborate of soda is generally sufficient, but should it not be sufficient, Potassii Permanganas, one grain to the ounce, Salicylate of Soda, five grains to the ounce, carbolic acid, one grain to the ounce, can be used to advantage. There are many other agents which are in some cases advantageous. Alum, Sulphate of Copper, Sulphate of zinc, Acetate of Lead, Nitrate of Silver, Chloride of Zinc and Tannic acid, in the strength of from five to eight grains to the ounce are in properly selected cases found to be of excellent service. Boracic acid in glycerine, one drachm to the ounce, promotes rapid healing of ulcerations. Iodine and carbolic acid are indicated in acute congestion and in atrophy, being disinfectant, astringent and anæsthetic. When the steam is to be used, and discharges are profuse, creosote ten drops to a 1-2 pint, oil of pine 20 drops to a 1-2 pint, oil of cubebs 20 drops to a 1-2 pint, and oil of eucalyptus 20 drops to a 1-2 pint are, at a temperature of from 120 to 150 degrees, accompanied with the best of results. In the line of sedatives, morphia, from 1-8 to 1-4 of a grain, belladonna, Ext., two grains to lard one ounce, chloroform, 20 drops to 1-2 a pint, hyoscyamus Fl. Ext., 1-2 drach to 1-2 pint, are very efficient to allay the pain incident to such dieases, or following the local applications. In order that the greatest success possible may be attained, it is important that we study to recognize the differential properties of the drug used as well as to make a correct diagnosis, and to intelligently adapt the one to the other. The thoroughness of the application, after properly cleansing the parts, is of no less importance. Frequent application, that is, at intervals of a few hours, is necessary, as the effect induced by an application does not last more than from six to eight hours. Since the patient must necessarily be intrusted with a part of the treatment he should be carefully taught how to manipulate the douche, atomizer or whatever is to be used. So far as internal medication goes there are usually special indications in each individual case, which it is of the greateat importance should be fully and carefully attended to.

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THE USE OF ALCOHOL IN MEDICINE.

By S. L. Wiswell, M. D.

As alcohol is the article oftenest called into service by the invalid, a consideration of its use seems eminently proper.

That an article seen on every hand and in some one of its various forms used by every one, with hardly an exception, should be the subject of so much speculation, is one of the anomalies of science.

The name indicates a fine powder or substance. Chemically it is $C_2 . H_6 . O$. Its Sp. gr. is .793 at a temperature of 60 Fahr.

It is the substance which supplies all products of distillation and fermentation with their intoxicating properties. Sugar, and all substances that can, by chemical change, be converted into that or glucose, will, by proper treatment, furnish it. Destructive distillation of many organic bodies, like coal, yield it. By certain processes anything containing hydrogen and oxygen in combination with its other constituent, carbon, yield a substance analagous to grain spirit. But few persons ever see the article in its purity. It is a perfectly transparent fluid of a not unpleasant odor, and a sharp burning taste. By reason of its great affinity for water, its action when brought in contact with animal tissues is very like that of the caustic alkalies, and when applied to a mucous membrane in the undiluted state will destroy the epithelium, and if taken into the stomach in any considerable quantity causes a violent inflammation and death.

To this great affinity for water depends, no doubt, its well known antiseptic property.

It is a solvent of substances containing hydrogen and mixes in all proportions with water. It becomes viscid at extremely low temperature, but never solid. Of its multifarious uses in the arts it is not within the province of this paper to speak. That it has become the one indispensable article in all pharmaceutical preparations is not strange, cheapness, certainty of action and its freedom from change all contribute to this. That it would be next to impossible to supply its place is evident. Its physiological action has for us the greatest interest. That this is but imperfectly understood is generally conceded; conclusions arrived at by different investigations differ widely. This diversity of opinion has for us a curious interest. Dr. Parks, of England, recently instituted a long series of experiments on soldiers living on a constant diet with or without the use of alcohol. In these obser-

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vations every element that could, by any possible chance influence the result, was taken into consideration.

These conclusions were arrived at: 1st. "That the elimination of nitrogen during exercise was unaffected by brandy, and since a similar result occurred in a series of experiments made during rest, it seems certain that in healthy men, on uniform good diet, alcohol does not interfere with the disintegration of nitrogenous tissue. This is of interest, from the fact that it controverts the generally received opinion that alcohol does prevent a waste of tissue, and consequently is a conservator of strength, and in this way supplies the place, in part, of food."

Secondly. "The heat of the body as shown by the thermometer was unaffected by the amount given, and that the apparent heat after alcohol must, therefore, be owing to subjective feelings connected with the quickened circulation rather than the actual rise of temperature." And here may be mentioned another theory that has been advanced to account for the feeling of warmth that follows its use, that a stasis occurs in the capillaries. This seems reasonable, taken in connection with the fact that congestion of internal organs and the application of cold or any substance that lessens the size of the capillaries, is productive of a sensation of coldness.

In the third series of experiments it was found that the pulse was increased in frequency by four ounces of brandy, and palpitation and dyspnœa were brought on by larger doses to such an extent as to greatly lessen the amount of work the man could do, and to render quick movement impossible. As the effect of labor alone is to augment the strength and frequency of the heart's action, it would appear improper to act on the heart still more by alcohol. The experiments do not show what the result would be in a case where the heart was exhausted by exertion. But from the above ascertained facts it would seem that rest would be the better remedy. Neither exercise nor alcohol produced any effect upon secretion of the kidney.

The conclusion of Dr. Parks was that the action of alcohol in dietetic doses, on the elimination of nitrogen and on the bodily temperature is so entirely negative that it seems reasonable to doubt if alcohol can have the effect to lessen the excretion of pulmonary carbon which is commonly attributed to it.

It can hardly retard, one would naturally think, the metamorphosis of tissue or substance furnishing carbon without affecting either the changes of the nitrogenous structures or bodily heat.

From these ascertained facts it would appear that its use in pulmonary affections is at least of doubtful utility.

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The elimination of alcohol has ever been a matter of conjecture. At one time it was thought that a greater portion was oxidized in the body and only a small portion eliminated unchanged. In 1860 Messrs. Perrin and Lallemande, in an elaborate memoir, maintained that all or at least nearly all the alcohol taken is eliminated unaltered.

More recent investigations do not serve to confirm the above mentioned conclusions. Among the investigations, those of Dr. Dupré may be mentioned as throwing at least a little light upon the question of its physiological action. He found that the amount of alcohol eliminated per day does not increase with the continuance of the alcohol. Therefore, that all the alcohol consumed daily, must of necessity be disposed of daily, and that as it is not eliminated within that time, it must necessarily be destroyed in the system. The elimination of alcohol ceases in from 9 to 24 hours in its free state, but that for six weeks a substance was found in the urine and in the breath which, though apparently not alcohol, gave all the reactions ordinarily used for the detection of that substance. Whether the article can be considered a food is still an open question.

The above considerations are of interest to the medical man, from the fact that it enters so largely into the treatment of disease. To use an article, with the action of which we are unacquainted, is at best but to treat the case empyrically.

Unfortunately we are not ignorant of the effects of its use. Its toxic properties are well known. No tissue of the body can resist its destructive action unless it be the osseous.

The Fibro-cellular quickly succumbs to its deteriorating influence. The muscular tissue becomes weak, and muscular atrophy sooner or later results in greater or less degree.

Fatty or atheromatous deposits take the place of healthy tissue. The mucous membranes become the seat of congestions. The power to digest and assimilate food is lessened. But by far the greatest injury is to the nervous tissue. When taken in large doses it produces a train of symptoms so closely resembling those seen in apoplexy that only a history of the case enables one to make a true diagnosis. The mental faculties do not escape its deleterious influence; this is too well understood to need more than a passing notice. It has one transcendent property, and it may be said that upon this depends its almost universal use,—the power to intoxicate, with all that the word implies. It alleviates pain by producing anæsthesia of the sensory nerves. It allays fear by causing one to ignore the teachings of common prudence. It paints in roseate hue what would be the dark picture of despair. In its mys-

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terious workings the poverty-stricken wretch forgets his poverty; the care-worn mind is no longer bound with chains that render life so irksome. In its deep oblivion is found a certain respite from sorrow. The pangs of hunger are no longer felt. But like its fellow narcotics it needs constant renewal, and herein lies the danger. While we have become cognizant of some of the changes wrought upon the tissues by its use, there is one far greater of which we know next to nothing, as yet. The craving for it is not, as some suppose, dependent upon its action upon the mucous membrane of the alimentary canal and the stomach; its usual receptacle when taken into the system is not the seat of this strongly-felt want; its nembranes may be in a state but little below inflammation from its constant use, and, in common with the whole system, be the seat of this intolerable longing for the accustomed stimulant; yet it is not necessary to administer it by the mouth. Hypodermic injection or inhalation of its vapor will do as well, hence it is evidently the brain that is by far the most urgent in its demands.

It is to be hoped that some investigator will at no distant day be able to tell us just what change in the nervous tissue is caused by its use. How or why the injection of any substance should create a want for its repetition is a fit subject of inquiry. That a change is wrought is evident, and the strongest evidence in support of this is the fact that time never completely obliterates the demand for it when the habit is once acquired, and it is pretty generally conceded that this craving is transmissible from parent to child. This seeming want of a stimulant is often so quickly acquired, that many have come to the conclusion that it constitutes a disease, (Dipsomania) a so called idiosyncrasy, and as much a part of the individual as scrofula or any other inherited disease. This may be true, but when we consider the fact that the infant, during the first ablution is often bathed with the article under consideration, the amount applied to the surface being contingent upon the size of the nurse's mouth, and her power to withstand the temptation to swallow it. Again, it would no doubt be impossible to find an individual that had not been plied with the stuff all through the days of childhood. It would be difficult to find the person, who, as a child, had never had the article administered to it And in most individuals, the child may be said to have run the gauntlet between disease on one hand and drugs on the other, and it is not strange that only a minority survive. In connection with the facts just mentioned, it seems hardly necessary to relate cases of inebriety.

Conceding what almost every person not engaged in its manufacture and sale will concede, that its use by a person in health is only produc-

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tive in greater or less degree of injury, the question of its use in disease may be considered. At the head is consumption. Some twenty-five years ago the treatment of this disease by the administration of alcohol became popular and has continued until this time, but that the results have been beneficial may well be questioned. That the hyperæsthetic condition of the system is lessened by its use may be true; but that this is not done at a sacrifice, hardly admits of a doubt. That a cure of the disease by its use ever occurs, statistics furnish no proof. Its use in pneumonia is (to use a term expressive if not scientific) fashionable at this time. This, in view of the great fatality we have witnessed during the past season in cases of this disease, and a large proportion of these cases being young persons, may well lead us to doubt the efficacy of the so-called quinine and whiskey treatment. The late professor Alonzo Clark said regarding the alcoholics in the treatment of common pneumonia, "I think they are utterly useless." He also adds, "If a man has obstruction to the breathing organs to such an extent that it threatens to destroy him, the alcohols will not cause a removal of it, and though he may breathe a few times on taking them, it will not amount to enough to enable him to recover." He further says, "You will be tempted to give alcohol in all cases of pneumonia, but you will come to the above expressed conclusion, if you have an experience similar to mine." It goes without saying that Dr. Clark held no second place in the profession when living. Bronchitis is often caused by its use, and its use in Pharyngitis, Laryngitis and Bronchitis must be in accordance with the teachings of Hanneman. In diseased conditions of the stomach its use is contra-indicated by the intolerance of that organ of its presence. Its well-known tendency to produce degenerative disease of the liver, will cause the careful practitioner to hesitate in its free use, and if he has any influence with his patients, should deter them from the use of the nauseous compounds, and it may be said that these vile compounds are but so many devices to "*raise the wind*". In diseases of the skin it is rarely indicated.

Rheumatism and gout belong to that category in which its use is more productive of harm than benefit. Its use in the various forms of fevers.—In catarrhal fever it is not indicated and not tolerated if given. In typhoid and typhus fevers it has been used with apparent benefit, but many of our best authors are decidedly opposed to its indiscriminate use, and in a large majority of cases, as is well known, no medication is needed, and if called for it is usually given in its dilute form as wine or porter. It is safe to say that its use in exanthematic diseases

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is only productive of injury unless it be in a few rare cases when the patient is in advanced life and enfeebled health. In the so-called specific diseases it is so detrimental that no physician will undertake a cure without insisting upon the practice of total abstinence. In that formidable list of surgical diseases (Erysipelas, Septemia, Septicemia and Pyemia) it will surprise one to learn that few authorities advise the use of alcoholics in their treatment. But one fact is noticeable, that those who are habitual drinkers almost invariably succumb to these diseases, and surgical operations upon such persons have this element of danger and make the prognosis very doubtful. The strictest abstinence from all alcoholics is enjoined upon those suffering from cancerous and lupoid affections. It is often used as a hypnotic and perhaps does as well as any drug; but its use is always to me done under protest, and not for a considerable time, for fear that the remedy will prove worse than the disease. And here it will be well to take into consideration the causes of insomnia. If hyperœmia of the brain be the cause then alcohol can only prove serviceable as a narcotic, and must of necessity, if we know anything of its action, eventually aggravate the disease. In the so called neuroses, when other and better remedies are not at hand, it may be administered for the production of a temporary anæsthesia, but from its well known deleterious action upon nerve tissue, its use should be suspended as soon as possible. Its use in obstetric practice is, as most will acknowledge, wholly uncalled for. Its administration in diphtheria has been considered indispensable by many practitioners; but statistics do not show that the treatment of this disease is more successful than in former years, when its use was far less common. The fact that in all cases there is an inflammation (or in other words) a pseudo Bright's disease of the kidneys, will naturally render the internal use of alcohol of doubtful utility, and it may be a question of some importance whether many of our fatal cases are not the direct result of the noxious effects of alcohol upon an inflamed kidney. There is no need to mention diseases incident to warm seasons, the injurious effects of alcohol in dysenteries and diarrhœas.

Its deleterious effects even when used in moderation, and in its dilute forms (as beer and wine) by those living in tropical climes, is not a matter of question, and paradoxical as it may seem, it is no less injurious to those inhabiting or visiting the Arctic region. Perhaps the investigations of Dr. Beale throw light upon this subject. He found in every tissue an infinite number of "Bioplasts," busily at work making new tissue to replace that which had become effete, but he did not discover that the "Bioplasts" or "Amœbea" had the power to select

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only such raw material as would produce healthy tissue. And however true the theory of "natural selection" or the "survival of the fittest," the new tissue formed in an unhealthy organism remains unhealthy still, and it is quite certain that the "Bioplasts" build of whatever is at hand, and it needs no vivid imagination to conjecture what the result must be when the organism is formed in part of the article under consideration. Keeping in view Beale's discoveries, the problems of heredity are easily solved. In the above the lesson inculcated is that the use of alcohol when prescribed for almost every ill, is neither scientific nor judicious, and, so far as nostrum vending goes, indicates a criminal greed for money; and, so far as nostrum swallowing goes, a lamentable ignorance. And so far as the present almost universal prescription of this substance in all cases of disease by physicians, indicates a state of things in which is seen a combination of carelessness and ignorance amounting to a crime against humanity.

HISTORY, CAUSE, PREVENTION AND RESTRICTION OF DIPHTHERIA.

By J. H. Hamilton, M. D.

Bretenneau attempted to prove, from views advanced by Homer and Hippocrates, that this disease existed, even in their time, being described by them as a most dreaded malady, and that, as a preventive, a combination of the sulphate of copper with honey was used, the remedy being called Unguentum Egyptiacum, and under this name it has retained its position in Phamacopeia for centuries.

At the close of the first and beginning of the second century after Christ, Aretæus described it as "Malum Egyptiacum" and emphasizes the fact that the tonsils are covered with "quodam concreto humore albo," which spreads over the tongue and gums. In fact, almost the first that is really known of the disease is from Aretæns, who claims that it originated in Egypt and Syria. It has, therefore, sometimes been called Egypt and Syrean ulcerations.

The disease made its appearance in Rome, A. D. 380, and has been described by Macrobius.

In the year 1537 it appeared first in Holland as an epidemic, an account of which was written by Forrest. In the seventeenth and eigh-

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teenth centuries it extended over other portions of Europe, especially through Spain, where it received the name of "Gasatillo."

German writers have mentioned it as occurring in 1650. In France and Italy, Chomel and Carnevale wrote of it in 1749.

In the year 1857 it made its first appearance on this continent in the city of New York, and was traceable to German origin. The same year it broke out in Albany, and in our own State, in the town of New Haven. Dr. C. L. Allen, Secretary of the State Board of Health, having been called in consultation, was the first to diagnose it.

This dreaded scourge made its appearance in Tennessee in the year 1858, a case having been brought there from North Carolina, and, says Dr. J. M. Boyd, of Knoxville: "Thence its spread was rapid, and its prevalence marked by great fatality, until there is hardly a town or villagein the United States that has not been visited by this fearful malady."

Bretenneau wrote of the disease in the year 1821, and it is due to him that it has its present name, because of its essential characteristic, the exudation.

He also declared that an inflammation without an exudation was never diphtheritis, and that an inflammation with exudation, when it does not spread by contagion, is not diphtheritis. From these and other facts he reasoned that inoculation was the only possible mode of conveying the disease; that the infection must by some means come in direct contact with soft mucous membrane or abraded skin, and that, on the other hand, the atmosphere did not act as a medium for spreading the contagion.

The views of Bretenneau differ but little from those of more recent writers, although at first he insisted that diphtheria must be considered as wholly a local disease. At a later period, however, he was obliged to concede that a blood poison was one of its essential characteristics.

After the discovery by Hueter and others of the vegetable organisms or bacteria, called micrococci, which are found in the diphtheritic membrane, the subjacent diseased parts and even the blood, the discussion concerning the nature of diphtheria assumed a new phase.

Nothing is definitely known as to the cause of diphtheria, when, where or how it originated. We know that it arises from contagion of the nature of infection, but whether or not the specific poison is ever of spontaneous development, has not been demonstrated. We can only judge of it by the history of its development and spread. Before discussing this point I will quote from an address delivered by Edgar S.

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Barnes, in relation to this question. He says in the summary of his conclusions as follows:—

1st. "In the majority of instances, no previous case can be found as a starting point of each outbreak. It is easy, when an outbreak is started, to follow almost every case, and show whence the contagion arose. But with the first case it is quite different, for in only four instances could I trace the disease, and in my experience a far larger proportion of the outbreaks of other infectious diseases, can be traced with certainty.

2d. "Diphtheria shows a regular yearly exacerbation during the winter months, a time unfavorable to the development of low forms of animal or vegetable life.

3d. "The ordinary infectious diseases show a much greater fatality in towns than in rural districts; whereas diphtheria is as prevalent in rural districts as in larger towns, the increased facilities for the spread of infection being counter-balanced by something equally potent, which I have suugested in the presence of decomposing animal matter, combined with dampness of soil.

4th. "In other specific diseases we never find a preceding period of an undeveloped disease; whereas, in outbreaks of diphtheria it is not uncommon to find that sore throats have prevailed for some time previously, which have not presented the true character of diphtheria. In three of the outbreaks, at least, I have recorded, this was observed; but in other specific diseases, for example small-pox, scarlet fever or measles, we do not observe any previous outbreaks of nondescript cases. This, to my mind, points to a poison gradually developed by unsanitary conditions, rather than to a definite, specific germ, be it bacterium, bacillus, micrococcus, or what not."

The recording of Dr. Barnes is wholly on the side of spontaneous origin. He concludes that its development is due to certain peculiar unsanitary conditions, viz.: "decomposing animal matter combined with dampness of soil."

From my observation and experience with diphtheria I should say it is no respecter of person, that it originates with the *rich* as well as *poor*, with the *high* as well as *low*, and with the *cleanly* as well as *uncleanly*, and when the soil is *dry* and *sandy* and free from decomposing animal matter, as well as when the surroundings are of the opposite character.

Were I called to investigate an outbreak of this disease of unknown origin, I would not look in any of the surroundings for the cause; I would say it might be the cause (a specific germ) has traveled hundreds

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of miles, perhaps through some circulating medium as a paper, letter, or, what I believe to be most common, money. Certainly this is considered to be the case with other infectious diseases. If diphtheria can be carried on the clothing of persons, as watchers and nurses, and upon the fur of animals as well, I see no good reason why it should not be as prevalent in rural districts as in towns, if unrestricted. As to its being more prevalent in winter than in warm weather, it is the same with other infectious diseases, especially small-pox, which is of undisputed specific origin.

As to the nondescript cases of sore throat which Dr. Barnes has observed, I believe they had nothing to do with the diphtheria which followed, but were simply a coincidence. Prior to 1850 there was no diphtheria in New York city, although foul sewers and unsanitary conditions existed. The germ was introduced into the city in 1857 by German emigrants, and infected the sewers, the filth of which furnished a nidus favorable to its propagation, so that now whenever sewer gas escapes it is laden with the germs of diphtheria. Reasoning from the history of its development and spread, I can but believe that every case of diphtheria owes its origin to some other previous one.

Diphtheria is a preventable disease. If proper precautionary measures are early adopted, it may be limited to the first cases; therefore, when it gets away from primary cases, and communities are thereby made to suffer, some one is to blame.

The most effective mothod of prevention is by quarantine and the isolation and disinfection of patients and the disinfection of the apartments where diphtheria has occurred. To illustrate the good resulting from this course allow me to give some statistics in my own experience and observations.

From one outbreak in the town of Montgomery there were 150 cases and 30 deaths, no attempt having been made to prevent its spread; in Richford there were 7 outbreaks, 17 cases and three deaths, and this, the result of proper and prompt precautionary measures. Upon this part of my subject, the prevention and restriction of diphtheria, I can do no better than to read from circular No. 4, issued by the State Board of Health:—

PREVENTION.

When a child or young person has a sore throat, and with it considerable fever, and especially if the breath has a bad odor, it should immediately be kept separate from all other persons, except necessary attendants, until it be ascertained whether or not he has diphtheria.

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Keep away from the sources of the contagion. Do not go where the disease is if you can help it; and, above all, do not let your children go where it is. If you do visit a case, bathe yourself, change and disinfect your clothing before you go where there is a child.

From the dwelling and its vicinity banish all sources of filth, whether of the ground, of the water or of the air. The ground under and around the house, if not naturally dry, should be thoroughly and deeply drained.

Diphtheria does not come from far through the air, therefore, do not shut up your houses tightly. thinking thereby to shut out the disease. By so doing you shut *in* the poison of re-breathed air, which paves the way and makes it easy for the poison of diphtheria to be taken.

All influences which cause sore throats probably tend to promote the taking and spreading of this disease.

Hence avoid exposure to wind and to breathing cold, dry air.

Also avoid any article of food or drink which tends to make the throat raw and tender.

Do not wear or handle clothing worn by a person during sickness or convalescence from diphtheria.

Beware of any person who has a sore throat. Do not kiss or take the breath of such a person. Do not drink from the same cup, or put anything of his to the mouth.

Be sure that the drinking water and the milk are pure.

RESTRICTION.

As soon as it is found that a person has diphtheria, he should immediately be separated from the rest of the family, and put into a sunny and well ventilated room, preferably on the upper floor, and as disconnected as possible from other rooms, especially the living and sleeping rooms of children.

Before moving the patient into the room, all needless articles, such as carpets, contents of wardrobes, etc., which would catch the infection, should be removed.

No other person beside the nurse or necessary attendants and the physician should be permitted in the room, and they should take special precaution not to carry the the infection. Their communication with the rest of the family should be as restricted as possible.

Plain and distinct notices should be placed upon the premises or house in which there is a person sick with diphtheria.

The selectmen, or health officer, should immediately be notified and should co-operate wtth the physician to keep the disease from spreading.

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Children and parents from other houses should be warned; and, if they needlessly and obstinately persist in coming, they should be driven away.

Neither the nurses nor any other person should eat or drink anything in the sick room, or anything which has been there. Food which the patient has left should be burned.

Cats and dogs should be kept from the sick chamber, or better, out of the house, for their fur can easily carry the infection. These animals, as well as some others, sometimes have diphtheria, and communicate it to children.

The dishes which the patient uses should not be used by others, or washed with other dishes. They should be washed by themselves in boiling-hot water.

The utmost care must be taken that the discharges from the mouth, throat and nose do not soil the room or its furnishings. These discharges should be received on pieces of cloth and then burned. If this cannot be done they should be thoroughly disinfected with Disinfectant No. 5, No. 6, or No. 2.

The discharges from the kidneys and bowels should be liberally treated with Disinfectant No. 5, No. 6, or No. 2, and not poured into the privy-vault, but buried, if possible, 200 feet or more from dwelling houses and water supply.

The bed and body clothing should not be mixed with the family wash, but should be put into boiling hot Disinfectant solution No. 4, or No. 5.

No person from a house where there is diphtheria should go into public assemblies, such as schools, churches, or concerts.

Persons who have had diphtheria should not mingle with the public for some time after the last trace of the disease has left the throat and nose, and then not until they and all their clothing have been thoroughly washed and disinfected.

In case of death the body should be inclosed in a sheet thoroughly wet in Disinfectant No. 4, or No. 5, and put into a tight coffin, which should not afterward be opened. The funeral should be strictly private, and in no case should children be permitted to be present.

After recovery or death, disinfect the room with Disinfectant No. 1.

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CEREBRO-SPINAL MENINGITIS.

By F. T. Kidder, M. D.

In giving a short review of Cerebro-Spinal Meningitis I do not expect to impart many new ideas, or give you much actual information on the subject, but to attempt to bring to your mind a disease which deserves more attention than it receives, and possibly start some one in new researches, as they have opportunity, in their individual practice, and bring more and brighter light upon a disease that is partially obscured by darkness.

The definition of Cerebro-Spinal Meningitis given by Stille, is a febrile, and often malignant, but non-contagious disease of unknown origin, usually occurring as a local epidemic, characterized by its rapid and irregular course; a tendency to disorganization of the blood and the formation of inflammatory exudates beneath the membranes of the brain and spinal cord.

The history of Cerebro-Spinal Meningitis, if it existed at all previous to the present century, is extremely meagre. During the 16th, 17th and 18th centuries a disease appeared at different times in certain localities of the old world which was spoken of as the "Spotted Fever," a name that was used for Cerebro-Spinal Meningitis up to the middle of the present century, which name led to the confounding of the two diseases, and has been the cause of more or less confusion in distinguishing them. But the Spotted Fever of the middle ages was attended by a very different train of symptoms from those of Meningitis.

The first lucid description of epidemic Meningitis was published by Vieusseux, in 1805, in which year the disease appeared in Geneva. One year later it appeared in Medfield, Mass., and during the next ten years it spread over New England, occuring mostly in the winter months, *i. e.* beginning in January and February, and continuing until about the first of June. It occurred almost simultaneously at widely-separated parts of the world, and in localities as diverse as possible in their geological, meteorological and sanitary states; at one time attacking cities with their filth and unsanitary condition, and at another passing over the large places and spending its force in the country towns, and among the farming population. It spared neither the rich nor the poor, and more often attacked the strong and vigorous than the weak and debilited. At times destroying life in a few hours, and then not until after

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weeks of suffering. All writers agree that it is a malignant non-contagious disease, due for the most part to some condition of, or has some relation to, meteorological agencies, For not only is it greater in cold than in warm climates, but it is greater in cold than in warm seasons, although cold is not an essential cause of the disease. The epidemic cause of the disease may affect beast as well as man. Dr. Gallup says that during the epidemic in Vermont in 1811, "Even the foxes seemed to be affected so they were killed in large numbers, near the dwellings." Dr. Smith states that, during the epidemic in New York in 1871, large numbers of the horses of the city car and stage lines died with it. And Dr. Law, of Dublin, affirms that while attending a lady suffering from Meningitis, nine out of eleven rabbits her son had, died, all in the same way. On examination there was found congestion of the vessels of the base of the brain, and vascularity of the membranes of the spinal cord, indicating inflammation. The lesions found after death are almost wholly confined to the brain and cord, with their coverings. Dr. Gallup found signs of inflammation in nearly the whole of the brain. "The dura mater," he says, "adheres more strongly than natural to the cranium, also the brain beneath often adheres to its meninges. An increase of serous fluid is often discovered between the membranes, and the ventricles are more or less filled with the same, as in hydrocephalus." The lesions of the spinal marrow and its membranes correspond with those of the brain. The dura mater is often very dark; its blood vessels engorged and its arachnoid cavity distended with serum more or less bloody or purulent.

The symptoms of the disease are such as we would expect from the nature of the lesion. They are sometimes sudden and sometimes gradual in their development. The attack is usually ushered in with a chill and all the signs of an acute inflammation. The vague pains that were present at first, become more concentrated, and seem to dart from the spine to the back of the head. In many cases the spinal muscles become contracted, so that the head is drawn backward, or the whole trunk is arched. Occasionally general convulsions also occur. The pulse and temperature rapidly rise above the normal, and continue to increase until death supervenes, or recovery sets in. In many cases eruptions appear, but they are by no means a constant symptom. The attack either rapidly becomes fatal, few lasting more than fifteen days, and the most ending before the sixth, or it goes on to a slow and tardy convalescence.

The sporadic cases that occur from time to time are characterized by nearly the same train of symptoms as the epidemic, but usually in a

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milder degree. Stille thinks that the sporadic symptoms are seldom primary, but are, rather, either an epiphenomenon of some other and previous malady, or are traumatic in their origin.

The case that I will relate occurred in my own practice, and although it has been nearly two years since the attack began, the patient is still far from well. It may not be an unusual case, but is interesting from the length of its duration, and the severity and persistency of its symptoms.

A lady, age twenty-six, unmarried, came to me in the summer of 1885, on account of her vision; complained of pain in the eyes on use. There was considerable amblyopia, vision in each eye, $\frac{2}{20}$, which was benefited very little with a glass. There was also weakness of the muscles of the orbit. I advised a compound lens, but she did not take it. In the fall of 1886 her eyes became so bad that she came to me again. The amblyopia had increased and was not relieved by a glass. The retina was congested and there was a pathological excavation of the nerves. I advised her to go to Boston, which she did, and the oculist there advised her to come home and be treated for her general health. By the first of November she began to have attacks of syncope, and the headaches increased in frequency and violence. She grew steadily worse until the last of December, when she gave up and took the bed. At this time she had a severe chill, followed by a temperature ranging as high as 103°, terrific pain in the head and back of the neck, and faintness, which was continuous, with nausea, but no vomiting. Opisthotonos was not marked, although there was a drawing of the head backward, and some wandering delirium. This condition continued with some variation, for two weeks, when the fever began to subside, and in three weeks was gone, leaving the patient in a very prostrate condition. For about three months there was little change, when she had another chill, followed with fever as before, and pain in the head, also pain in the spine as low as last dorsal vertebræ, accompanied by extreme tenderness of spine over the same region. Her pulse now went up to 130 and was, of course, weak; pain also appeared in arms and hands, with numbness and inability to move them far from the body, some difficulty in breathing also appeared, and the sore throat which she had had from the beginning still kept up. Her eyes were in a bad condition all of the time; could bear no light at all.

This second acute attack passed off as before, to be followed in a few months by another of the same kind, in which the remainder of the spine became involved, and produced its effect upon the legs, the same as the arms had been affected by the previous attack. The last attack

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occurred the last of November, 1887, since which time, with the exception of a few relapses, caused by some over-exertion or excitement, she has been very slowly inproving. At present she has the sun in her room for two or three hours per day; has fair appetite; arms and chest are improving; pulse is down to one hundred per minute, and her general condition is much improved.

From the beginning she been unable to raise her head from the pillow, and even now she is able to have a second pillow only part of the time. The spine is still very tender and unable to bear even the motion of moving the bed. In this case the first attack seemed to be brought on by overwork in teaching and excessive eye strain. The subsequent attacks and the extension of the disease, followed in the natural order of events, until the meninges of the cord were wholly involved. What the termination will be, is, of course in doubt, but it would seem from the improvement that has taken place, that in time recovery would follow. What the pathological condition is at present, it is impossible to tell, but there is probably thickening of the membranes, with possibly some collection of lymph which may not have been absorbed. The treatment was sedative until the acute symptoms were past, when a change was made to Iodide of Potash, and the Biniodide of Mercury. The one thing that has given temporarily the most relief to the distressing symptoms has been counter-irritation to the spine; first with blisters and afterward with croton oil. At present the treatment consists of $\frac{1}{32}$ gr. of Strychnia three times a day, with an anodyne of Cannabis Indica at night for insomnia. The dose of anodyne is gradually being lessened as the condition of the patient improves, and I think soon she will be able to do without it entirely. It would, perhaps, be advisable to combine Phosphide of Zinc with the Strychnia in this case, and in time electricity, but it is not well borne at present.

The treatment in a general way may be mentioned in a few words. Many drugs have been tried, but as Von Ziemssen truly says, "We are far from having it in our power to decide whether a rational treatment of the symptoms has cured the disease, or lessened its mortality." There is no established rule or precedent to follow; at one time a stimulant or tonic treatment to combat debility is indicated; again an antiphlogistic course, to allay the inflammation of the brain and spinal cord, and again large doses of narcotics to lull the pain and quiet the spasm. Drugs in the acute attacks will relieve much, but in the chronic cases which drag their weary course along from month to month, although medicine will, in a measure, assist, it must be supplemented by the great healer Time, which accomplishes much in this world of ours. Each

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one must judge for himself what course to pursue. And at times, indeed, he must remember that "They also serve who only stand and wait."

REPORT OF CASE OF TAIT'S OPERATION FOR REMOVAL OF OVARIES, WITH SPECIMENS.

By L. M. Bingham.

Miss M——N——, age 32; occupation, seamstress and fancy needle work.

Father. Died at 26 years of age; lived only three days after a pulmonary hemorrhage.

Mother. Never was a strong woman; died at 24 years of age of consumption. Mother's brother died of consumption at 20.

Brothers, two. A twin brother died at 2 of croup; one brother living and in good health, age 24.

Maternal Grandmother. Died early in life, of consumption.

Paternal Grandparents. Both died early in life; cause unknown.

Patient never menstruated until 22 years of age. Was never regular, menstruation occurring only from three to eight months; once or twice a whole year has intervened between periods of menstruation.

She began to have pulmonary hemorrhages at 15, and they have continued at intervals of from one to three months, up to time of operation. Hemorrhage nearly always took place from the lungs just previous to menstruation. For the last six years every menstrual flow has been attended with severe local and constitutional symptoms.

Local Symptoms were severe pain in pelvis, particularly on left side. tympanitis, extreme tenderness, retention of urine with occasional attacks of suppression, accompanied by albuminuria.

Constitutional Symptoms were vomiting, loss of appetite, temperature elevated, tongue heavily coated, and often an hysterical attack.

At times there was a free discharge from vagina, of mucopurulent matter, attended by all symptoms of menstruation, but no flow of menstrual fluid took place within three months just preceding the operation. On two different occasions a free flow of watery fluid took place from the vagina. At each time the discharge of fluid continued over a period of

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several days. The first appearance of these discharges were attended with the usual symptoms of menstruation. During the past two or three years the menstrual periods were accompanied by severe vomitings (occasionally showing the coffee-ground appearance), extreme tympanitis, with pelvic pains and tenderness, suggestive of pelvic peritonitis; almost complete suppression of urine, and the little amount passed containing blood. Cataleptic and hysterical attacks were frequent and severe. During the last year previous to the operation, she was confined to the bed three-fourths of the time and unable to work or even sew for herself; became greatly emaciated; obtained very little sleep.

Having been informed that there was a possibility of relief by removing the ovaries, she was at once possessed of a firm determination to have the operation performed. Her general condition and family history did not promise the most favorable results.

The operation was performed on May 31, at Mary Fletcher Hospital, both ovaries being removed. The work was done under strictly antiseptic precautions, the opening in abdominal wall being sufficiently large to admit of the introduction of two fingers. The ovaries were found to be of large size but no adhesions. The left ovary was occupying a position posterior to the uterus and well down in the cavity of the pelvis. The right ovary occupied its normal position. Both contained a large number of cysts, in size from a pea to a filbert. Many of these cysts were ruptured from the slight pressure required to bring the ovaries through the opening in abdomen. Uterus quite small. The ligature used was braided silk. The stumps were slightly seared. Ligature cut short and parts replaced in normal position. Pelvic cavity carefully sponged. The wound in abdominal wall was closed by two silver wire sutures, including all tissues of the abdominal wall. Previous to the twisting of the wire sutures, the edges of the wound were carefully adjusted by two continuous catgut sutures. The first including peritoneum and second skin fasciæ and muscular tissues. Iodoform gauze was used for first dressing, then the bichloride dressing, with a goodly amount of absorbent cotton. The wire sutures were removed on the eleventh day; wound completely and firmly healed. The case has progressed favorably throughout. Has gained flesh; is able to walk about without pain or discomfort; expresses herself as feeling better than in ten years. She has had one attack of hysteria, short in duration. For the past two months she has been free from any return of previously frequent troublesome symptoms; is gradually resuming her needle work; looks forward with great pleasure to better health than she has

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ever known. Formerly her life was one of despondency, with suicidal tendencies.

The specimens for your examination are less than half the size when first removed.

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OBITUARY OF OSCAR FITZWILLIAM FASSETT, M. D.

By S. S. Clark, M. D.

In compliance with your appointment, I announce the death of Dr. O. F. Fassett, which occurred at his residence on Friday evening, July 26, 1887, at nine o'clock, His death was not unexpected. For several weeks, his family, relatives, medical brethren and advisers had watched him in his pain and suffering, anxiety and emaciation, until every thought or expectation of recovery was abandoned. Of this fact he was fully cognizant, and deliberately prepared to meet the fatal issue.

Oscar F. Fassett was the son of Anson Fassett, and the oldest of four children; was born at Enosburgh, Franklin county, Vt., February 28, 1827. He had the educational advantages of the public schools of his native village, and also that of a flourishing academy at Bakersfield, Vt., then under the principalship of Mr. Spaulding. Here he distinguished himself as a close student and a ripe scholar, and acquired such taste for study and the sciences that he immediately commenced the study of medicine in the office of Drs. Hurlburt and Butler, two prominent physicians of East Berkshire, Vt. After a suitable term of pupilage with them he attended medical lectures at Woodstock, Pittsfield and the College of Physicians and Surgeons, New York, receiving his degree at Woodstock in the fall of 1851. Soon after receiving his degree he went to Swanton with the intention of settling there, but finally decided that East Berkshire offered greater inducements. Therefore, in June, 1852, he moved to that place, where he found ample opportunity to gratify his ambition. For thirteen years he traveled over the hills and along the streams, studying nature in all her gorgeous beauty, upon the hillsides, in her coat of green, and the mountain tops in their autumn tints, and listened to the songs of the birds in the gray of the morn, until he became a lover of all things grand and beautiful in nature. It was here he had pulmonary hemorrhage that prostrated him for some time, but he told me he thought his journeying in the mountain air contributed largely toward his recovery, and warded off that lurking disease, phthisis.

In September, 1865, he removed to St. Albans, and entered into partnership with Dr. J. L. Chandler, which continued only for a year or two, as the infirmities of age and ill-health soon rendered him (Dr. Chandler) unable to practice, and they dissolved partnership.

He was now well established in a large practice and enjoyed the confidence and esteem of the people with whom he practiced. His reputation extended, and was well earned by close and diligent study; careful,

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cautious, seldom, if ever, advising heroic measures, trusting rather to *vis medicatrix naturæ* than doubtful measures.

In his intercourse with his professional brethren none had cause to complain. The code of ethics was easy for one of his honorable, honest and upright nature to follow. He was President of this Society in 1864 and '65, and, as many of you remember, wrote an interesting address upon cerebro-spinal meningitis, as it appeared epidemically about that time. He was an easy writer and a fluent speaker, always using good and appropriate language, highly entertaining to the listener. In person he was about five feet nine, and weighed about 140 pounds, grey eyes, and wore a full beard.

His illness began about two years preceding his death, for about a year slight dyspeptic symptoms and less energy to perform his daily work. In January, 1887, he drove several miles on a cold day, and had a severe chill on his return. This was followed by an attack of duodenitis, which continued about three or four weeks, and, thinking convalescence was fully established, he accepted an invitation and went on a journey to Mexico and California. He did not fully recover, and on his return trip, in Utah he had a relapse, but continued his journey to Chicago, where he remained a few days until able to journey home. His illness was continued from that time until his death, July 26, as before announced. The autopsy revealed an extensive inflammation of the mucous coat of denodenum and a small, hard tumor of the pancreas, probably schirrus. The lumen of the ductus communis was not obliterated. The body was much emaciated and icteric.

In 1859 he was married to Miss Fannie Clapp, of Montgomery, who still survives him. They had no children.

As a man Dr. Fassett was a thorough Christian gentleman, a member of the Episcopal church, exemplary, earnest, silent, thoughtful, courageous and true. As a friend he was steadfast, loyal, unswerving and affectionate.

For twenty-three years I have known him well, and I can truly say that his real merit and excellence were not generally known. Had his lines been cast in New York city or Boston, or some more populous city, he would have ranked well up with those who have immortalized their names in the history of medicine.

As a friend I weep for him; as a brother physician I mourn for him; I drop the immortelle wreath upon his grave, and I feel that mankind is honored, humanity blessed, and the world benefited by the example of so grand and noble a character as O. F. Fassett's.

Great statesmen, brilliant orators, dashing generals, mitred bishops, learned judges, wise lawyers and good physicians stand on the misty shore to welcome him. In all that throng no greater soul, no kinder heart, no gentler disposition is to be recalled than Oscar F. Fassett's.

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OBITUARY OF L. C. BUTLER.

By F. H. Cilley, M. D., of Jericho.

Lucius Castle Butler, one of the best known men in Vermont, both medically and politically, died Friday evening, March 25th, 1888, at his home in Essex, Vt., aged sixty-eight years. He was born in Essex, Vt., March 17th, 1820. The family of his father consisted of nine children, of whom only two are now living—Hon. S. G. Butler, of Essex, Vt., and Rev. H. E. Butler, Professor of Mental and Moral Science, in Alma College, Michigan.

Dr. Butler received his early education in the district and high schools of his native town, and at Bradford Academy, where he prepared, under the tuition of his brother, Rev. Franklin Butler, then Principal of the academy, to enter the second year of a college course in the University of Vermont. He, having decided, however, to study medicine, abandoned the plan of taking a regular collegiate course, and began at once the study of his chosen profession in the office of Dr. George Howe, of Jericho, and afterward in that of Dr. Leonard Marsh, of Burlington. He attended lectures at Dartmouth and Woodstock Medical Colleges, from the latter of which he was graduated in June, 1843. In 1875 he received also the honorary degree of M. D. from Dartmouth College.

Dr. Butler began the practice of medicine at Clintonville, N. Y., immediately after his graduation, and there resided until 1850, when he removed to Essex, where he spent the following nine years. In 1859 he removed to Bradford, where he resided until 1860, when he went to Philadelphia, Pa., to take the position of associate editor of the *Medical and Surgical Reporter*. In this relation he remained for two years, when he resumed the practice of medicine in Essex in 1862, where, in his profession, he was continually occupied until a few weeks before his death.

Dr. Butler was prominently connected with this Society for many years, and was a large contributor to its published transactions. He was its Secretary for eight consecutive years, and its President for three years. In this capacity he delivered the first public address before the graduating class of the medical department of the University of Vermont. He was a constant member at its meetings; took a lively interest in its prosperity, and did as much, or more, than any other member to keep the Society alive at times when it was less prosperous than at present. He was also a member of the Council of the Ninth International Medical Congress of the Victoria Institute of Great Britain, and of the American Medical Association, and in this relation served for sev-

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eral years on the Committee on Hygiene. He was also President and Secretary of the Chittenden County Medical Society, and honorary member of the Franklin County and the New York Medical Societies.

As a family physician he was careful, kind and sympathetic, and had endeared himself in many a household in the town of Essex. He had one quality that it would be well for us all to emulate—secrets intrusted to his keeping were never revealed.

In town and State Dr. Butler has occupied several important offices. In 1882 he represented his native town in the Legislature of the State, and was Chairman of the Committee on Railroads, as well as the candidate of his party for Speaker. For a number of years he held the office of Town Superintendent of Schools, and President of the Essex Classical Institute. The latter office he held at the time of his death. For the past six years he has been a member of the State Board of Supervisors of the Insane, and for the past three years one of the United States Medical Examiners for Pensions, being Secretary of the Board.

The last business he did in his profession was to attend the weekly meeting of the Board at Burlington, some five weeks before his death.

His last sickness was somewhat peculiar in its symptoms. His urine contained albumen which would point to Bright's disease, but he had no other indications of that disease. He called his malady muscular rheumatism, from the fact that he had so much pain and lameness in his muscles. For a number of weeks before he took his room he had to anoint his body with vaseline and morphia in order to get any sleep. It was for this reason that he called his disease muscular rheumatism. He also had much trouble with his stomach, not being able to retain even one drop of milk at a time, but he could drink a glass of ice-water at any time. Two things he called for most during the last few weeks, were ice-water and fresh air. A small, round tumor could be distinguished in the left epigastric region a few days before his death, but as it was his request that no autopsy be held, his case will remain a mystery in some respects, although some were of the opinion that his disease was of a malignant nature.

In the Masonic fraternity Dr. Butler was a prominent and active member. He served as Master of McDonough Lodge at Essex; as High Priest of the Bradford Chapter Royal Arch Masons; Thrice Illuslustrious Grand Master of his Council; Grand Senior Warden of Grand Lodge for three years, and Grand Master of the Grand Lodge of Vermont for two years. Also a member of the Committee on Foreign Relations at the time of his death.

Dr. Butler has been a prolific writer upon a variety of subjects. Among his published medical works are the following: "The Physiological Properties and Therapeutic Action of Veratrum Viride," "Decadence of the Human Race, Cause and Remedy," "Cerebro-Spinal

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Meningitis," "New Remedial Agents," "Intoxication by Alcohol," "Diphtheria," "Locality of Consumption in Vermont," and "Hygiene of the Farm." He also wrote the "Early History of the Town of Essex," and the "Historical Address for the Centennial Celebration of the Settlement of Essex." For a number of years he was connected with the preparation of the Vermont Registration Report, and prepared each year the summary of births and deaths. He was for many years a regular correspondent of the *Boston Post*, *Burlington Free Press* and *New York World*, and associate editor of the *Argus and Patriot*.

Of his religious life much might be said, but suffice it to say that his ancestors for three generations were Christians. His brothers and sisters all became Christians in early life. He united with the Congregational Church in Essex at the age of eleven, and hence was for more than fifty years one of its members, serving at various times as deacon, teacher, and superintendent of Sunday-school. He loved this Church of his fathers, and, when he came to leave it, provided for the perpetual continuance of his yearly subscription. His faith in God, and in His word as interpreted by the common agreement of the Church in all ages, was strong and unwavering, even in these days when many would exalt reason above God. The old paths in which the fathers lived and died were the paths to which he adhered in life and in death.

His last illness was attended with much pain, as before stated. He was taken in October, 1887, with what he called muscular nervous rheumatism, which increased in intensity all through the fall and winter. He, nevertheless, in the midst of much pain, attended to his daily duties until February, when he was compelled to give up his practice, only so far as it could be attended to at his office. At about this time he wrote the following in his physician's pocket record:—

"During these several weeks I have rested from my labors, professionally, and enjoyed some of the pains and aches I have tried many times to remedy in my patients, sometimes with very little success. My disability is a muscular rheumatism with a mingling of neuralgia. It affects my muscles only, and mainly of my ribs and back. Lame, sore, tired, weak." He, however, rallying somewhat, kept the harness on until he was ready to fall from sheer exhaustion. Indeed, he has been, during the few past years, carrying a load of work sufficient to tax the energies of two men. At no time in his life had he been doing so much work. He said, after he had given it all up and was looking back upon it, "What a heavy load I have been carrying!" But with a resignation which seems more and more wonderful as we think of it, he, stricken down right in the midst of his plans and greatest usefulness, gave up all without a murmur. Conscious to the last, he was quick to recognize the arrival of the grim messenger. Summoning all

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his remaining strength, he faintly said, "Good bye," accompanying the word with a farewell wave of his hand, and Dr. Butler was no more.

May 6th, 1845, he was united in marriage to Hannah D. Page, of Essex, who survives him, with a son, Rev. E. P. Butler of Lyme, N. H., and a daughter, the wife of Dr. F. C. Granger, of Randolph, Mass.

His funeral was attended by a large circle of mourning friends and neighbors. An appropriate sermon was delivered by the Rev. Edwin Wheelock, of Cambridge, Vt., the Grand Lodge of Vermont, F. and A. M., having charge of the exercises, and bestowing all the honors of the order. Thus ends a life that we should all do well to emulate.

OBITUARY OF SAMUEL NICHOLS, M. D.

By DANIEL CAMPBELL, M. D., of Saxtons River.

Dr. Samuel Nichols was born in Walpole, N. H., in 1812. After attending Unity Scientific School for a year he entered the Norwich Military Institution, and graduated at this institution with distinguished honor in 1839.

He studied medicine with Dr. Ortt, of Harrisburg, Pa., and graduated at the Vermont Medical College in 1843. He located at Bellows Falls, Vt., in 1847, and continued the practice of medicine in this location up to the time of his last sickness. After a lingering sickness of several years duration, he died from the effects of a paralytic attack, July 8, 1887.

When the good and faithful physician passes away, it is eminently fitting and proper that some permanent record should be made of his life-work. Unlike the other learned professions his work has mainly been confined to the privacy of the sick room. The general public cannot know the anxiety, the responsibility, the sleepless nights of the faithful family physician in his contest with disease in the sick chamber, but he may have the gratitude and kindly remembrance of those for whom he has labored.

Dr. Nichols was pre-eminently the *family* doctor. He was thoroughly devoted to his profession. He never neglected the calls of the sick and suffering. He was thoroughly qualified and faithful in the discharge of all his professional duties; he was careful in his investigations of disease, and prompt in the application of remedies; good sense, sympathy and perfect integrity were eminently prominent in his mental organization, and he hated quackery and imposture in all its forms, not only outside, but in the profession. He never gave himself a vacation or needed rest from his professional labors; he justly had

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the confidence of his professional brethren and the community in which he lived, and no physician was more truly loved in life or more deeply mourned in death. He fulfilled the different relations of life, as citizen, as husband, as father and friend, with a fidelity that endeared him to all and made his death an irreparable loss.

OBITUARY OF SUMNER PUTNAM, M. D.

By J. Draper, M. D.

"A prominent physician dead!" Under this always startling headline, in the leading daily newspapers of New England on the morning of the 20th of August, 1887, was announced the decease of Dr. Sumner Putnam, of Montpelier. This event, thus heralded to the public, came more closely home to the profession of Vermont than elsewhere, for he had been for more than a score of years a citizen of our Capital town, and one known to the profession of this State as a studious and growing member, each year more and more relied upon, both as a practitioner and a counsellor. To the majority of his fellows in this society the news of his death doubtless came with unexpected suddenness, for his final illness was not a very protracted one, and he had almost reached the allotted age of man before disease had fastened its unrelenting grip upon him. Under date of the 8th of March, 1887, after two or three weeks of increasing insomnia, in a letter to the writer of this memoir, he penned the following statement:—

"My health since childhood has been robust, never losing a meal; have been busy of late, however, riding about less, and reading and thinking more constantly. I am now 69 years old, and for a year or so have often during a walk, after meals more particularly, felt dizzy, so that my cane was useful. Cannot put on and button my clothes as quickly as formerly; my voice has weakened and my nerves are very easily excited, and I am very apprehensive. Seemingly my trouble now about sleep arises more from fear and apprehension that I shall not get to sleep than from anything else. On my worst nights medicines seem to have no effect, as XL grains of Bromide repeated and followed by ⅛ grain Morphia, repeated sometimes, fail to induce sleep. When less nervous XL grains will sometimes send me off. I have not had any pain or extra heat, and no increase of pulse except from some momentary excitement. The restless bad feeling is mostly in my eyes; arises at the epigastrium, attended by frequent sighing and shifting from side to side. Bowels pretty regular, urine normal, and the skin readily perspiring. Am taking small doses of quinia, strychnia and muriatic acid,

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and a plain nourishing diet with out-door exercise. What course would you advise for me? How long will this state continue? If I find no relief what would cold water treatment do for me? How should it be used? Would you take hyperotics or not, and if so what?"

In this detail of prominent symptoms, as a whole somewhat ambiguous in their significance, I was unable to see any clear evidence of organic disease, and with the foregoing record of a good constitution, and my knowledge of his uniformly temperate life, I ventured an encouraging prognosis. That he labored under a nervous prostration was evident; and that time at the best would be required, and rest from work be imperative, I did not doubt; but that he was in the beginning of a hopeless decline I was unwilling to believe. Early in the following month I paid him a visit by his request at the home of his son-in-law, Dr. Bisbee, in South Royalton, and found his condition unimproved, but without new developments. He had been to New York and consulted a specialist upon nervous diseases, but without much satisfaction or benefit. Mental introspection was the dominant characteristic of his malady.

There was at this time no evidence of organic or inflammatory disease, and I still hoped for a favorable outcome. But this was not so to be. He gradually grew worse, and little by little his mental faculties gave way. He returned to Montpelier, but not to the renewal of his life-long enjoyments and labors. Prostrated upon his sick bed his life was slowly ebbing away under the cloud which more and more enveloped his mind. Ministered to in the most faithful and assiduous manner by the members of his devoted family, he passed away as we all might wish, save that the full realization of this devotion was denied him, and the support this rendered him in his passage through the dark valley not fully comprehended. Welcome, under such circumstances the light of the future, dawning and breaking upon the darkened way!

From Dr. Bisbee, his son-in-law, I have the following statement of the autopsy:—

"Body emaciated to an extreme degree.

"Outside the cranial cavity nothing of any great importance was found. A small cyst in right kidney, a slight amount of effusion in the pericardial sac, two concretions imbedded in the substance of the spleen—one two inches in length, on the convex surface of that organ, the other smaller, near the hilum. There was found on opening the cranium a general state of congestion; both arteries and veins seeming distended, with some degree of infiltration and effusion. The dura mater was found slightly adherent to the skull, and, when incised, about ten ounces of serous fluid escaped.

"The arachnoid and pia mater appeared very much thickened, and between them was found a considerable quantity of thick, gelatinous

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substance. The membranes were adherent to the brain along the longitudinal sinus and the convex surface, so that they were with much difficulty separated. The surface of the brain was especially congested, and its blood vessels very much injected."

From his family I gather the following biographical details:—

Dr. Putnam was born February 21, 1818, in East Montpelier, and was the eldest of three children of Sylvanus and Lucinda Bancroft Putnam.

His preliminary education was received at the common schools, and at Montpelier Academy. His Preceptor in medicine was Dr. Jared Bassett, of Plainfield, and he took his medical degree from the Vermont Medical College at Woodstock, in 1840.

He located in practice at Greensboro, in this State, where he acquired a large and successful business in that and the neighboring towns. While there he was twice elected to the lower branch of the State Legislature, in 1857-9.

In December 1847, he married Diana F., daughter of Dr. Nathaniel and Fanny Davis King, who survives him. They had four children, Ella Frances, Alice M. (wife of Dr. A. B. Bisbee), Charles Sumner, and Sylvanus Clark Putnam. Of these, Mrs. Dr. Bisbee is the only survivor; Ella dying in 1855, Charles in 1865, Sylvanus in 1875, aged 4, 8 and 12 years respectively.

With a desire to take a less extensive practice and also to give his children better educational facilities, he came to Montpelier in 1865, and here he followed his chosen profession till arrested by his last illness; his whole professional life covering nearly half a century.

In 1871 he was President of this State Society, and for ten years its Treasurer.

After the death of Dr. J. Y. Dewey, of Montpelier, in 1876, he was appointed Medical Examiner for the National Life Insurance Company, which business with its associations he very much enjoyed, and which office he held until his decease.

During his busy life he attended several courses of medical lectures in New York city, and was ever a close and untiring student in his profession. To his family he was always devotedly attached, and ever the kindest and tenderest husband and father.

His long and steadily laborious life, it is gratifying to be able to state, should be regarded successful from a business as well as a professional point of view; and it is only just to say that the pecuniary emolument was always the secondary consideration.

Dr. Putnam was a contributor from time to time to the medical journals, and the transactions of this society have been enriched by valuable papers from his pen. The earliest of these was in 1866, upon the subject of "The Epidemics of Washington County." In 1870, he pre-

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sented two papers; one upon "Local applications in metrorrhagia," the other upon "Insanity and the Insane," a rare essay, which I have before commented upon. (See Insanity in Vermont, transactions of 1815.)

In 1871, he was President of this society, and his official address without a name, but in reality embracing the results of modern medical research, may be read with profit by any of us to-day.

In 1873, we find a paper upon "Remittent Sub-acute Meningitis."

In 1875, he raised his voice in aid of the establishment of a State Board of Health, in an excellent paper entitled "Sanitary Reform."

An obituary of Dr. J. Y. Dewey, of Montpelier, was published by him in 1877, also an article on "Spinal Pathology," showing careful anatomical and physiological investigation; likewise one on cases of "Strangulated Hernia." In 1878, two papers appear in the Transactions, one upon "Pelvic Celluletis," and one upon "Puerpural Mania." "Cerebro-spinal Disturbance in Febrile Disease" forms the subject of a communication in 1879, and in the following year "Obstetrics in the first four weeks in May," illustrating the difficulties attending placenta prævia, formed an article, and "Two Cases of the Fatal use of the Aspirator" another.

In 1881, he relates "What I saw and Learned of the Epidemic of Diphtheria at Montpelier in 1880 and '81," especially in the use of whiskey as a remedy—graphically told and strongly put. In 1883 he records in a careful manner the autopsy of Dr. Corey, of Craftsbury, and in 1886 we note the last contribution from his pen, "A case of Erysipelas or Malignant Pustule," like all his cases faithfully portrayed and faithfully commented upon. In addition to these special papers, our meetings were indebted to him for many unrecorded experiences related in the course of debate, always modestly, but always illustrative and instructive.

It is noteworthy that five of the seventeen papers enumerated were upon subjects connected with nervous or mental diseases,—a fact showing the direction of his thinking—drifting away somewhat from those questions which engross so largely the time and thought of the general practitioner. It was perhaps this tendency in him which in subsequent years drew us more than usually toward each other in our professional relations. My acquaintance with Dr. Putnam dates from my admission as a member of this society, at the annual meeting in October, 1873. That evening the society was entertained at Bishop's Hotel by the medical profession of Montpelier, and the supper gave occasion for social interchange rarely afforded. It was on this occasion, too, that I first made the acquaintance of Dr. Butler, who likewise has passed beyond the horizon of our earthly vision. The friendly professional intercourse thus commenced between these honored members and myself was sundered only by their decease, and I trust it will hardly be

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deemed a digression if I thus couple them together in affectionate remembrance on this fraternal occasion. My personal and professional relation to them both was more than ordinarily intimate.

Dr. Putnam was a close observer and a close logical reasoner. He was all his life, as we have said, a diligent student in his profession. When not actually engaged in his practical round of duties, the cases under his care engrossed his thought and gave direction to his reading. He was not a man to jump at a conclusion, nor did he come to rely upon the lessons of experience alone, but sought to find also support in the experiences of others. His published observations were given as contributions to be weighed by the profession for what they were worth, rather than placed like manufactured products upon the market with their name and stamped value marked upon them by the vender.

Well was it said of him after his decease, "The science of medicine he never regarded as a trade, a mere means of subsistence, but as 'The holiest task by heaven decreed, an errand all divine,'—and he ever exerted himself to maintain a high standard of professional honor, abhorring all forms of quackery and pretence, whether practiced by members of the regular profession or not."

Truly, also, has it been said, "Dr. Putnam was naturally diffident, but constant effort throughout his life had overcome this reserve in a measure; still he seemed to have two natures—the outer, which the world saw, and the inner, revealed to those who knew and loved him best. *They* knew he was a true lover of nature; not a bird but he knew its note and more or less of its habits; not a tree, but he knew its name and its qualities; the flowers he loved, and tho' not familiar with their names he knew their faces and favorite growing places; while fine scenery, for which he ever had a quick and appreciative eye, stirred his best emotions."

Vividly do I remember the delightful surprise he gave me on an autumn afternoon, when after a two days' attendance, many years ago, upon a court in Montpelier, he proposed to take me out for an airing; climbing somewhat slowly the ascents for several miles to the northward, then descending and returning through the so-called Middlesex Narrows. Doubtless his own enjoyment on this occasion was heightened by my captivation; and I venture to say no point was lost to me, so adroitly was every wild and picturesque feature of this mountain pass brought to my notice as we rode thro' this bit of scenery, unparalleled by any I have seen in this Green Mountain State. Evidently this was to him a beaten path, one which he loved to seek, and out of which had come to him grand thoughts and conceptions of the great Creator.

I cannot learn that there was ever a time when his mind grasped great truths whole, without making allowances for the errors incorporated with or enshrouding them.

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His son-in-law writes me, "He enjoyed very much the study of religious subjects, the most advanced theories suggested by modern scientific research." He approached these as he approached all the great subjects of human concern, in the attitude of the investigator, using his reason in the inquiry, and not ignoring the experience of himself and of others as an element in the inquiry. He was not one to be moved by appeals to the emotions. He reached conclusions slowly, by patient research and by logic, and I think his religious convictions crystalized late in life, but came to be unshaken and abiding with his latter years.

Indeed, I am sure that at times his mind was greatly exercised upon the subject of the hereafter. It was in 1875, soon after the death of his only surviving son, that he wrote me asking "if the work of Dr. Martyn Paine upon The Physiology of the Soul and Instinct as Distinguished from Materialism (a book to which I had made allusion in a published paper that year), was in my judgment likely to settle or disturb one's mind in respect to the future life?"

He was no skeptic, and no theologian. On the occasion of this memorable ride thro' the Middlesex Narrows, he spoke of some of his conclusions,—conclusions with which I could heartily agree, and sentiments to which I could fully respond. He believed in a religion of evolution. Science exalted his conception of God, of the universe, of the nature of man, and of the grandeur of human destiny. He saw in every man the germ of immortal life, which here or hereafter was destined to be developed. He recognized law and order as the natural condition of all life, and as he saw it here, so he believed it to be hereafter; and within the stern rulings of law he saw likewise the Divine love incorporated therewith. To the great problems of the future he applied his reason, and held himself rigidly responsible to his Creator, so far as he could comprehend his laws, believing that, for perfect salvation, perfect knowledge and conscientious obedience must go hand in hand.

Taught by experience and knowledge that this life is a process of steady unfolding, tho' often accidentally and prematurely cut off, he came to the belief that it was but the beginning of an illimitable development; that progression was the law of life, and that man's highest destiny was not reached here. No adequate object was presented in the history of man, either sacred or profane, for the practice of God-given virtues, if death ended all. Yet the practice of these virtues alone satisfied the aspirations inborn in the human soul, growing with the spiritual growth and strengthening with the spiritual strength. Immortality alone answered his inquiries and responded to his convictions; and in this conviction, acquired thus step by step, strengthening year by year and confirmed on all sides to a firm belief, he passed beyond the confines of mortality.

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OBITUARY NOTICE OF DR. F. L. MORSE.

By D. F. Rugg, M. D.

Dr. Frederick Langdon Morse was born in the town of Rochester, Vt., in 1847. He was the only son of Joseph L. and Eliza Chandler Morse. Besides attending the common schools he took a course at the Normal school at Randolph, also attended Barre Academy. In 1868, immediately after leaving school, he commenced the study of medicine in the office of Drs. Huntington and Richmond, of Rochester, and remained with them, excepting what time was spent in attending medical lectures, until the spring of 1871. In 1871 he was married to Electa Adaline Webber, daughter of Sumner A. and Phœbe Guernsey Webber. He graduated at Ann Arbor, Mich., in 1872, and about that time settled in Windsor, which place he made his home until the time of his death, excepting a short term of practice which I think was spent in some place near Boston.

He rapidly gained an enviable position as a practitioner of medicine. I shall not soon forget a remark that he made to me soon after our acquaintance, which was in 1876. He said, "It is not near so hard to attain a high professional standing in a community, as it is to maintain it." As a successful manager in the sick room he had very few equals Prepossessing in appearance, courteous and affable in his manner, he readily won the confidence and esteem of his patient. Unlike many physicians he had a special liking for the practice of obstetrics.

During a part of his life in Windsor he was quite prominent in Masonic affairs. Was a member of Vermont Commandery No. 4, Knights Templar; at one time Master of Vermont Lodge, No. 18; had attained to the 32° of Ancient and Accepted Scottish Rite of Masonry; he was a member of Windsor Lodge of Knights of Honor. His was the first death that occurred during an organization of over five years.

For about eight years he was Superintendent of the public schools in Windsor; took great interest in the subject of education, and labored faithfully for the advancement of school systems.

Three young men were students in his office, namely, Julian Pollard, Walter Bowen and William Stocker.

He joined the Vermont Medical Society at St. Albans at the semi-annual meeting, June 25, 1872.

He was a communicant of the Episcopal Church at Windsor. He had great aversion to the thought of dying in winter and being laid at rest in the cold, frozen and snow-covered ground, desiring, rather, that

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when called to give up this life, he might find his last resting-place, when trees were green, flowers in bloom and all Nature smiling. He died June 11, 1888.

The following is from one who knew him quite intimately, and who attended at his bed-side during his last illness:—

"Dr. Morse had been suffering from a valvular disease of the heart since he was a student. and during the latter years of his life he suffered from the mental apprehension of death peculiar to his disease. His tact in the sick-room was quite remarkable, and I never saw one quicker to take in the salient features of a case. His energy in practice was exemplified by his work almost to the close of life, and his love for his profession is shown by the fact of his attendance at the Polyclinic in New York, during the last year of his life; his purchase of recent medical works and modern surgical instruments at a time when he must have known that his days for work were, indeed, few. During his days of health and strength he succeeded in a remarkable degree in holding the confidence and good will of his patients. Of his sickness and death I can say but little. When a medical man, who loves his life and work, sees and feels those grave symptoms of secondary lesions of organic heart disease, whose import he knows full well, who shall attempt to describe his feelings? I cannot. During the long weary months, with nights of wakefulness. which he described as simply horrible, with days of hope and fear and dread, I found his mind calm, clear and alert, and when the time came when hope was gone, he accepted the inevitable bravely, and, desiring the final rites of the Church, slept the sleep which knows no waking."

The following is copied from The Vermont Journal of June 23, 1888.

IN MEMORIAM.

"In the death of Dr. F. L. Morse, Windsor has sustained an irreparable loss. Coming from a long line of medical ancestors, he inherited a love for and a knowledge of his profession which enabled him to attain and secure an exalted reputation for professional skill. His power to diagnose a case was intuitive, and his successful treatment elicited admiration. Many lives have been saved and much suffering averted by his quick perception and speedy action combined. Possessing an extremely delicate organization, he was most sympathetic with all those who were suffering and afflicted. Never satisfied with the knowledge he possessed, he was diligent in studying and increasing his store of information. Repeated visits to the great center of enlightenment on special medical topics enlarged his field of usefullness and made him still more self-reliant. Among his intimate friends one of his pro-

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nounced traits was his love for the beautiful in art, poetry and music, and in everything whereby strong and beautiful thoughts can be expressed. Taken in his early manhood he had, throughout his life, proved himself a dutiful son and friend, every pulsation of whose heart was the embodiment of truth and sincerity. With tearful pride, I, who call myself his friend, offer to his sorrowing family my sincere condolence, and ask permission to enter the home made doubly sacred by death, to lay this tribute on the shrine that love has erected to his memory in faithful hearts."

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CONSTITUTION AND BY-LAWS

OF THE

Vermont State Medical Society,

(As revised October, 1887.)

CONSTITUTION.

ARTICLE I.—NAME.

This Society shall be called the Vermont State Medical Society.

ARTICLE II.—OFFICERS.

The officers of this Society shall be a President, Vice-President, Secretary, Treasurer, Auditor, Publication Committee of three members, Executive Committee of three members, of which the Secretary shall be one *ex officio*, Board of Councilors, consisting of one from each county, and a Board of License Censors, consisting of three members, all of whom shall be elected annually at the opening of the second day's session, by ballot when demanded by any member present, or in such other manner as the Society shall direct, and shall hold their respective offices until the close of the next annual meeting, and until others are chosen.

ARTICLE III.—MEETING.

There shall be an annual meeting of this Society, held on the first Thursday and Friday after the second Wednesday in October, in Montpelier, each year of the Legislature, and the annual meeting in the off year of the Legislature shall be held in Burlington, and a semi-annual meeting at such place as the Society shall direct, on the last Thursday and Friday in June.

ARTICLE IV.—MEMBERSHIP.

Any physician residing within the State, who is a graduate of a regular recognized Medical School, may become a member of this So-

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ciety at any regular meeting, upon recommendation of the Board of Councilors and vote of the Society, by signing the Constitution and paying the sum of two dollars to the Treasurer.

ARTICLE V.—DISCIPLINE.

Any member of this Society guilty of intoxication, unprofessional or irregular practice, or of gross immorality, or for other good reason, may be expelled or suspended from the Society by a vote of two-thirds of the members present at any annual meeting.

ARTICLE VI.

This Constitution may be repealed, altered or amended at any annual meeting, by a vote of two-thirds of the members present, provided such repeal, alteration or amendment be proposed at a previous annual meeting, and notification be given by the Secretary, by a notice printed upon the programme of the annual meeting at which such repeal, alteration or amendment will come up for action.

ARTICLE VII.

This Society may adopt such By-Laws, not repugnant to this Constitution, and may repeal, alter or amend the same, in such manner as a majority at any annual meeting may deem proper.

BY-LAWS.

ARTICLE I.—DUTIES OF OFFICERS.

SEC. 1. The President shall preside at all meetings and perform all the duties incident to such office. He shall deliver or cause to be read an address or dissertation on some medical subject at the annual meeting at which he presides.

SEC. 2. The Vice-President shall preside in the absence of the President, and perform all his duties and possess all his privileges. He shall deliver or cause to be read, an address, on the evening of the first day of the semi-annual meeting.

SEC. 3. The Secretary shall keep a record of the proceedings of the Society, and of the members present at each meeting; shall arrange

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and publish the programme at least two weeks before each meeting; shall conduct the correspondence; and shall have his necessary expenses defrayed from the funds of the Society. He shall, if unable to attend the meeting of the Society personally, send the Records to some member in attendance.

SEC. 4. The Treasurer shall collect and disburse all moneys of the Society, agreeably to their directions, and make report of his doings to the Society at its annual meeting.

SEC. 5. The Auditor shall examine and verify the accounts of the various officers.

SEC. 6. The Executive Committe shall make selection of a subject or subjects for the programme for the next ensuing meeting; shall make assignments of the parts to any of the members, as in their judgment they think advisable, and report the same to this meeting and to each and every subsequent meeting.

They shall make such other arrangements for the meetings of the Society as they shall deem essential for its best interests.

They shall select the place and time of holding the semi-annual meeting, and shall report the same to the Society at the annual meeting.

SEC. 7. The Publication Committee shall receive all papers referred to them by the Society, and as soon as possible subsequently to the annual meeting of the Society, shall publish such of those papers as they may deem best suited to promote the interest of the profession and the public good, under the title, Transactions, and perform all other appropriate duties.

SEC. 8. The Board of Councilors shall choose its own officers and make its own regulations, providing they do not conflict with the Constitution and By-Laws of this Society.

There shall be a meeting of said Board on the first day of the annual and semi-annual meetings, and at such other time as the Board shall determine.

The duties of said Board shall be to examine the credentials and qualifications, with reference to their methods of practice, etc., of persons desirous of becoming members of the Society, and present at each meeting the names of such as, in their opinion, are eligible to membership under the Constitution and Regulations of the Society, and to report the names of members deceased, if any, and recommend such action in each case as they may deem best. The Councilors shall recommend for membership, only such physicians as shall present to them their diplomas, or a certificate in writing signed by

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some member of this Society in good standing, stating that he has personal knowledge of said applicant having a diploma of a regular medical school.

SEC. 9. It shall be the duty of the Board of License Censors to issue license certificates to regular physicians wishing to practice medicine in this State, in accordance with the State law regulating such practice.

ARTICLE II.—DUES.

SEC. 1. Every member of this Society (honorary excepted) shall pay to the Treasurer an annual fee of two dollars.

SEC. 2. Any member who shall fail to pay his dues for a period of three years, shall be dropped from the Society, and his name stricken from the roll of membership, and he shall be so notified by the Secretary.

SEC. 3. Any member who has been dropped from the Society for non-payment of dues, may be re-elected after any number of years by a vote of three-fourths of the members presentat any regular meeting, upon payment of the three years' arrearages.

ARTICLE III.—HONORARY MEMBERS.

The Society may elect at each annual meeting, not more than four honorary members, non-residents of the State, who shall have the same privileges as ordinary members, except that they shall not be eligible to office, nor have the right to vote.

ARTICLE IV.—DELEGATES.

Delegates shall be appointed annually to represent this Society in the American Medical Association; the Medical Department of the University of Vermont and of Dartmouth College at the examination of candidates for graduation, when duly notified; the Connecticut River Valley Medical Society; the White Mountain Medical Association; the White River Valley Medical Association; the Northern New York Medical Association; the State Medical Societies of the New England States, together with those of New York, and such other States and societies as the mutual interests of the societies may direct.

In cases where delegates are unable to attend to the duties of their appointment, it shall be their duty to notify the Secretary, of such inability, and the Secretary and President shall appoint others to supply their places.

ARTICLE V.

Every member who is appointed to prepare a paper for any meeting

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shall, at least thirty days before such meeting, furnish to the Secretary a short abstract of the same, which abstract, or an epitome of which, the Secretary shall cause to be printed in the programme, following the announcement of the paper.

ARTICLE VI.

Any member wishing to withdraw from the Society shall be permitted to do so on his written request after he shall have presented the Treasurer's receipt for all moneys due.

ARTICLE VII.

The Constitution and By-Laws, together with the names and residences of members in good standing, shall be published in every volume of the Transactions.

ARTICLE VIII.

The names of deceased members of the Society, with the dates of birth, graduation, admission to membership, death and such other items in brief, of personal history, as may seem desirable to the Committee on Publication, shall be printed in each copy of the Transactions under the caption, "In Memoriam."

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LIST OF MEMBERS.

The following is a list of the members of the Society:—

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Chas. L. Allen, Rutland.
L. W. Adgate, East Hardwick.
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B. J. Andrews, Burlington.
C. J. Allen, Waitsfield.
L. M. Bingham, Burlington.
H. S. Browne, St. Johnsbury.
P. D. Bradford, Northfield.
G. B. Bullard, St. Johnsbury.
S. T. Brooks, St. Johnsbury.
A. C. Bailey, West Randolph.
J. D. Brewster, Windsor.
C. W. Brigham, Pittsfield.
A. B. Bisbee, Montpelier.
I. N. Bishop, Jericho.
W. D. Buchanan, Cambridge.
C. F. Branch, Newport.
S. S. Clark, St. Albans.
Walter Carpenter, Burlington.
F. H. Cilley, Jericho Center.
H. A. Cutting Lunenburgh.
J. M. Clarke, Burlington.
E. R. Campbell, Bellows Falls.
C. S. Caverly, Rutland.
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W. H. Currier, Hartford.
C. E. Chandler, Montpelier.
H. A. Crandall, Burlington.
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H. S. Carver, Marshfield.
Joseph Draper. Brattleboro.
Geo. Dunsmore, St. Albans.
O. G. Dyer, Brandon.
Geo. Davenport, East Randolph.
O. W. Daley, White River Junct.
M. H. Eddey, Middlebury.
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G. H. Fox, Rutland.
Geo. S. Foster, Putney.
L. W. Flanders, Castleton.
L. M. Green, Bethel.
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H. D. Holton, Brattleboro.
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J. D. Hanrahan, Rutland.
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F. W. Goodall, Bennington.
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D. W. Hasleton, Springfield.
B. W. Davis, Montgomery.
E. A. Bates, Highgate Center.
E. O. Crossman, Burlington.
R. M. Kincade, Highgate Center.
F. D. Robertson, St. Albans.
A. David, Burlington.
A. A. Letoureau, Burlington.
J. F. E. Allard, Winooski.
Geo. B. Nichols, Barre.
A. V. Goss, West Randolph.
F. L. Brigham, Pittsfield.
E. K. Baxter, Sharon.
C. W. Jacobs, Richmond.
Thos. A. Cootey, Mt. Holly.

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The Preliminary Term, consisting of a course of Lectures and Recitations in the various branches of Medicine and Surgery, will begin on the first Thursday of November of each year, and continue until beginning of Regular Session. Fee, $30.

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For further particulars and circulars, address the Dean,

Professor A. P. GRINNELL, M. D., Burlington, Vt.

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NOV
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TRANSACTIONS

OF THE

VERMONT

STATE MEDICAL SOCIETY.

FOR THE YEAR 1889.

PUBLISHED BY THE SOCIETY.

ANNUAL MEETING THE FIRST THURSDAY AND FRIDAY AFTER THE SECOND WEDNESDAY IN OCTOBER, AND THE SEMI-ANNUAL MEETING THE LAST THURSDAY AND FRIDAY IN JUNE, AT SUCH PLACE AS DIRECTED AT THE PRECEDING ANNUAL MEETING.

R. S. Styles' Book and Job Printing House,
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1890.

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VERMONT

STATE MEDICAL SOCIETY,

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NOTE.—Each article published herein stands upon its own merits, as the expression of its Author's opinion, for which the society does not hold itself responsible.

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TRANSACTIONS

OF THE

Vermont State Medical Society,

1889.

SEMI-ANNUAL MEETING.

The semi-annual meeting of the Vermont State Medical Society was held at Brattleboro, at the Brooks House, on July 9 and 10, 1889.

The meeting was called to order at 10 o'clock A. M. by the President, Dr. J. M. Clarke, of Burlington.

Prayer was offered by the Rev. Mr. Collins, of Brattleboro.

In the absence of the Secretary, Dr. O. W. Phelps was elected Secretary pro tempore.

The records of the last meeting were read and approved.

The following named gentlemen were elected to membership :—

S. E. LAWTON, Brattleboro.....U. V. M. '81.

F. B. JOHNSON, Jacksonville.....U. V. M. '69.

A. W. RICE, Wilmington .....Univ. N. Y. '80.

C. S. PRATT, Brattleboro.....Coll. P. & S., N. Y. '84.

Dr. Scott, of Cleveland, O., Prof. of Theory and Practice of Medicine in the Cleveland Medical College, was introduced by Dr. H. D. Holton, and made brief and interesting remarks.

Dr. Holton, in behalf of himself and Dr. Draper, extended an invitation to the members of the Society to an entertainment at his house this (Tuesday) evening, after the Vice President's address.

Drs. D. F. Rugg and Holton spoke of their attendance upon the meeting of the American Medical Association, at Newport, R. I.

Adjourned until 2 P. M.

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AFTERNOON SESSION.

Dr. Holton presented a paper on the subject of Medical Legislation.

Col. Kittridge Haskins being present, was invited to address the meeting. He did so briefly.

Dr. C. W. Peck, of Brandon, read an interesting paper entitled "Some Observations on the Cause of Disease."

Adjourned until 7.30 P. M.

EVENING SESSION.

Dr. F. W. Goodall, of Bennington, Vice President of the Society, delivered the usual annual address on "Thrombasis and Embolism of the Pulmonary Artery."

The Society then adjourned to the residence of Dr. H. D. Holton, where a pleasant entertainment was given.

SECOND DAY, JULY 10.

At 9 o'clock the Society visited the Vermont Asylum for the Insane.

Met in session at the Brooks House at 11.15 A. M.

Dr. J. Draper, of Brattleboro, presented a paper entitled "The Oath of Hippocrates."

Dr. Phelps read a paper on Anæsthetics.

Adjourned.

O. W. PHELPS, SEC. *Pro tempore.*

THROMBOSIS AND EMBOLISM OF THE PULMONARY ARTERY.

BY DR. F. W. GOODALL, OF BENNINGTON.

In January last I was requested by our State's Attorney to prepare myself to give expert evidence in an approaching "murder case." Among the questions for special consideration, were the causes of heart clots and œdema of the lungs. The time I devoted to the study of the "case," which was heard in June, precluded the possibility of my preparing a paper on any subject other than one pertaining to that work. I think I remained entirely unpartisan in the "case," and I am not aware that I have any theory to establish; but one of the direct results of my investigation has been to establish in my mind the clinical fact that right heart clots are frequently the cause of œdema and congestion of the lungs, and that left heart clots are rarely so if ever, I not having noticed a case in all my research, and in my opinion heart clots in either or both sides produce no such effect unless of sufficient magnitude to give rise to appreciable symptoms.

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The following is drawn largely from various writers, and different publications, extending over a period of many years. From the difficulty of giving every writer his due credit by means of name and quotation marks, I have entirely ignored the one, and only to a limited extent acknowledged the other. Trusting that this will relieve me of all charge of plagiarism, I proceed.

The subject of clotting within the circulatory apparatus is not a new one, but one that has occupied the attention of the profession thirty years or more, and presents a frequent source of extreme danger and sudden death. Embolism in the pulmonary artery has been more generally considered the cause of sudden death after delivery, than thrombosis. A careful examination of the numerous recorded instances of sudden death after delivery, will show a large proportion of them with no history of peripheral phlebitis or venous obstruction, from which an embolism could be derived, it is, therefore, probable that many of these deaths were due to thrombi.

Virchow was the first to examine the whole subject in a complete and systematic manner, and place it on a firm foundation. He applied the term thrombosis (which is from a Greek word, signifying to coagulate or clot) to coagulation of blood in the heart or vascular system, and embolism (which is also from a Greek word, signifying a wedge or stopper) to the plugging of vessels which result from transportation of such clots or thrombi by the current of the blood.

Thrombi may form in any part of the vascular system. In the heart we meet with three kinds:—1. The loose, soft, dark colored clots, which form ordinarily after death, and are œdematous, flattened, branched and only close incompletely the containing vessels;—2. The firm yellowish white thrombi, often adherent to the walls and entangling the valves, which form while death is taking place or shortly before, and which occur chiefly in cases where there has been a severe and protracted struggle, more especially in pulmonary and cardiac disease;—3. This variety of concretions, is not always separated by a distinct line of demarkation from the previous one. They are laminated, being made up of layers of fibrin with colorless corpuscles. This class of thrombi when situated in the pulmonary artery, from continual contact with the arterial wall, determines a slight irritation, in virtue of which a blastima, exuded between the wall of the vessel, and the clot soon becomes organized; by degrees, this substance extends on the circumference of the plug, and soon forms a sort of cupule in which the latter is contained. At last it envelops it completely, and encysts it, so that after a time, often not very long, the fibrinous coagulum of the pulmonary artery is found to be every where surrounded by a perfectly organized membrane, the coagulum often undergoing partial softening especially toward the centre. The concretions, whether in the heart or blood ves-

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sels, which have begun to soften and break down, are often of long standing.

Dr. Turnbull relates the case of a concretion in the right ventricle which was partially softened, and which presented clear evidence of its existence for more than a month, and in a case recorded by Lancereaux where several concretions had so softened as to assume the form of fibrinous cysts, the duration was probably much longer. The softening of these concretions produces the puriform appearance often seen in the centre, and the washing away of the detritus is a cause of capillary embolism in various organs; in the lungs when the thrombus or embolism is in the pulmonary artery or venous system; in the liver when it is in the portal system, and in the brain, spleen, and other organs of the body when the concretion is in the left side of the heart or large arteries.

An *embolism* is formed by a fibrinous clot, which may have formed in the heart or circulatory system, either arterial or venous, and by impulsion is forced into a vessel so as to partially or completely obliterate its lumen.

These concretions, so nearly allied in many respects, are very different in one essential feature. A thrombus is always a thrombus, while it remains at its birth place; becoming an embolism as soon as it has migrated to a new home. Therefore, an embolism is never found at its birth place, but is always the result of the clotting process elsewhere than at the place of impaction. Dr. Playfair says the term embolism should never be applied to cases of fibrinous obstruction in the heart and pulmonary artery except where peripheral thrombus can be found from which it can be derived, or where it presents a corresponding structure to a peripheral thrombus round which more recent fibrin is generally deposited, and no case can be an embolism if no clot exists in any of the peripheral veins. Emboli are sometimes found in both sides of the heart but more frequently in the right, and they differ from coagula formed just prior to, or immediately after death in their elasticity, brownish or marbled color, and in the condition of the fibrin, which is always in progress of retrogression. Thrombi which, during life, form primarily in the branches of the pulmonary artery, differ from emboli in their form and seat, and in the absence of the characters peculiar to the latter. But after a certain lapse of time these distinctive characters of emboli become wanting, and it is then very difficult to tell whether a coagulum met with in the pulmonary artery, has been formed there or has arrived there by migration. The physical appearances of emboli in the right heart, or in the pulmonary artery are clearly portrayed in Braithwaite's Retrospect, Part 47, page 212, and they are also elaborately contrasted with thrombi which have primarily formed in the same situation, showing conclusively two different geographical origins for practically the same thing.

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The *consequences* attending upon such an accident as embolism depends upon the importance of the vessel involved to the functions of life. When it occurs in the arteries of a limb, gangrene of the part is the result; if in the vessels of the brain, symptoms of apoplexy and softening of the brain supervene; but if the pulmonary artery is affected by it, death may be almost instantaneous.

Lancereaux speaking of the condition of the lungs in cases of pulmonary embolism, says it is evident that an embolism, which closes up the trunk of the pulmonary artery and gives rise to sudden death, cannot cause any important change in the pulmonary parenchyma. Supposing such alteration possible, time would be wanting. But it is different when a coagulum comes to be situated in an important division of the pulmonary artery, closing its canal completely, and he agrees with Virchow, who states that however complete the obstruction, it produces no alteration in the parenchyma, and, above all, no gangrene of the lungs. At the most Lancereaux has observed slight diminution of volume, anæmia or œdema, and he explains this physiologically by the fact that the pulmonary artery is an organ engaged in hematosis and that the nutrition of the lungs is effected, not by this, but by the bronchial arteries. It is, however, important to notice, that there are certain special conditions of the embolic clot which are capable of giving rise to pneumonia and gangrene. These conditions pertain to a special state or alteration of the tissues in the midst of which the thrombus has been formed; if the coagulation has taken place in the midst of a purulent or gangrenous focus, the coagulum, formed in part of fibrin, and in part of other elements, possesses qualities in virtue of which it may alter the tissues with which it subsequently comes in contact; thus it is that metastatic abscesses appear in the lungs of individuals with suppurative thrombosis of the cerebral sinuses and in women suffering from metritis or suppurative phlebitis. Notwithstanding Lancereaux's opinion concerning the changes in the pulmonary parenchyma, the perusal of cases from which I will quote later on, leads me to think, that œdema, or congestion of the lungs, or both, are of frequent occurrence in these cases, and not infrequently of a very pronounced character.

Authors differ in opinion as to the primative causes of the formation of these clots. Some hold that it is the arrest of the circulation and stagnation of the blood in the heart or blood vessels, others that it is inflammation of the internal membrane of the heart, valves, or vessels; while others again believe that the cause in some cases, at least, must be in the blood itself.

In a case of pulmonary thrombosis following diphtheria, the most careful dissection and critical inspection revealed no pathological condition of the heart valves, or any of the blood vessels, and the condition was supposed to be solely due in that case to cachæmia, or altered blood

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crasis, such as is found in the cachexias subsequent upon any exhausting disease, of any kind, more especially puerperal, and diptheretic crasis. General causes, would also operate by lowering the force of the heart, and the contractility of the vessels, or by causing modifications in the blood itself, which are but little understood, and it is important to point out that, under the influence of general causes, it is always where the circulation tends to be slow, that coagulation commences.

In the normal condition, the blood contains from 2 to 3¼ parts of fibrin in a 1000, but the proportion is altered in many diseases and is increased greatly in all the acute inflammatory diseases, especially in pneumonia and acute rheumatism. This increase is the cause of the buffy coat, formerly so carefully looked for with reference, both to diagnosis and treatment. In the puerperal condition, the blood contains an increased quantity of fibrin, which contracts slowly, and presents generally the buffy coat. In chlorosis, it occurs also from there being some absolute increase of the fibrin, together with a large relative increase, owing to the great diminution of red corpuscles. In many cachectic diseases, such as cancer, there is a condition of the blood similar to that of chlorosis, and in all the diseases here referred to, the condition of the blood itself predisposes to the formation of clots in the vascular system. Anæmia, debility, post-partem hemorrhage, and for a long time it has been known that the loss of blood and syncope or exhaustion during impoverished states of the body, favor coagulation and fibrinous deposits. In persons of a gouty constitution, there is a remarkable tendency to thrombosis in the veins. This may be due to the presence of an acid, or other morbid matter in the blood, but Sir James Paget, who has drawn attention to this form of thrombosis, seems to think that there is a local phlebitis. It is, however, worthy of observation, that in the allied disease, acute rheumatism, supposed also to be connected with an acid diathesis, there is likewise a tendency to the deposit of fibrin, especially on the valves of the left side of the heart. In a case of fractured tibia, the theory is that coagulation began in the ruptured vessels, mounted up to the first valves, the collateral veins being ruptured, allowed a blood stasis favoring further coagulation, which extended upwards, and in time impeded the circulation, causing new coagula, until the principal venous trunks became completely obstructed. Admitting this theory, other causes may be added, such as diminution or loss of contractile power in the veins, tumors compressing them, and whatever retards the venous circulation.

Among the exciting causes, mental emotion and sudden exertion have seemed to precipitate some cases, and it is difficult to avoid the conclusion that in some cases, the fatal catastrophe might have been avoided had the patient been kept in a condition of mental and bodily repose.

In presenting the symptoms, it occurred to me that they would be quite as impressive, if given as seen in cases more or less typical. Dr. W. S.

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Playfair relates the case of a lady, six months pregnant, who was operated upon for anal fissure. Symptoms of abortion supervened in two days, but this did not take place until the ninth day, when the entire contents of the uterus was expelled. Some twelve hours before she aborted, her pulse were found to be 160, her temperature 108 and her respiration 40. She complained of no pain, and there was nothing to show the cause of this sudden change. But, at the time of abortion and immediately following, she suffered from extreme dyspnœa, the countenance was excessively pale, her lips white, the face expressing extreme anxiety, and she was pulseless. The sounds of the heart were almost inaudible. She called incessantly for air, and said she was being suffocated. She survived two hours in this condition, the face being convulsed the last few seconds of life. The above symptoms were all thoroughly typical of obstruction in the right side of the heart. The autopsy revealed the right side of the heart extremely distended, also the large veins of the neck and the two cavæ. The right side of the heart was filled with a soft black coagulum, on the upper surface of which was a little discolored fibrin; it had all the appearance of a recent post mortem clot. At the bifurcation of the pulmonary artery, plugs of firm fibrin were found obstructing the passage of the blood, more especially on the left side, where they extended about an inch and a half into the primary division of the pulmonary artery. These clots were of a yellowish or buff color, very firm, but not moulded to the vessels in which they lay. They were of a leathery consistence, and were not surrounded by any black coagulum. On section they were all uniform in color, and partially laminated, with the exception of one which lay across the pulmonary artery and was nearest to the heart. In the centre of this was found a piece of fibrin of the shape of an almond, three quarters of an inch long, surrounded by, but separable from, the remainder of the fibrin, which was of less firm consistence. At its base was an irregular surface, which fitted closely to a corresponding rough surface in a clot in the iliac vein. The uterus was well contracted and perfectly healthy, and its veins contained no coagula.

A lady, convalescing from diphtheria, on getting out of bed for the first time, was suddenly attacked with extreme faintness, difficulty of breathing, tumultuous action of the heart, and great sensation of impending dissolution. She soon partially recovered, but it was some time before she was able to get about. After she had apparently entirely recovered, on moving across her room, she suddenly fell down and said she was dying. She was placed on a bed where she soon expired, retaining her intellect to the last. In this case the heart contained some fibrinous clots in the right side. The right pulmonary artery contained a large, firm, dark clot, plugging the whole caliber of the vessel for some distance. The left pulmonary artery was also plugged to some extent,

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with a clot apparently broken down, more pale and firm in structure than that found on the right side, and adherent to the sides of the vessel but softened in the center, conditions which led to the belief that this thrombus was the one which gave rise to the first train of symptoms, and from which recovery was taking place.

A lad of twelve years, convalescing from diphtheritic paralysis and great debility, in the act of getting up from bed, fell back, as if faint, and died. The heart contained no fibrinous clots but the arteries on both sides, (which arteries was not stated, but the pulmonary arteries probably,) were filled with dark and firm clots, and the lungs were congested.

Miss T., aged eight and a half, was taken suddenly ill, constantly spitting, and sometimes vomiting frothy mucus; she was pale, eyes sunken, no pulse at the wrist, the action of the heart was tumultuous; very deep inspirations, feet and legs icy cold. She complained of no pain, only something in her throat. She turned over in bed and, with a deep sigh, expired. She retained her consciousness to the last. This little girl went to church on Sunday, was about as usual on Monday, except a little headache. Tuesday she complained of a great quantity of phlegm coming in her throat, which occasionally produced vomiting, of nothing but tenaceous, frothy mucus. She died at six P. M., only being in bed three hours. The autopsy revealed nothing abnormal in any of the organs, except the lungs were very much congested, and the bronchiæ were full of frothy mucus. Miliary tubercles were found in the left lung, which are supposed to have produced the blood crasis. That led to the thrombus which plugged completely the pulmonary artery, which in turn caused the congestion of the lungs and bronchorrea.

A lady aged 46, fractured her right leg, with much injury to the soft parts and considerable extraversation of blood. The case went on well for three weeks, when a starch bandage was applied. On the following morning the patient was quite well, but some hours later, violent palpitation of the heart occurred, the patient cried out, became livid, and was dead in a few minutes. Autopsy revealed firm clots, filling the veins up to and including the lower part of vena cava, and an embolism was found in the infundibulum of the right ventricle, extending into and filling the pulmonary artery, of a deep red or rose color, and not homogeneous. The lungs were engorged but crepitant.

A gentleman with phlebitis of the right leg, was suddenly attacked with prostration, tightness at the precordia, slight dispnœa, cough and expectoration of sputa resembling pneumonic sputa. He got worse for three days, at which time he was complaining of excessive prostration, with small, feeble pulse; skin soft and acting well, complete absence of febrile symptoms; sensation of tightness at the præcordia, pain in the right side of the chest posteriorly, slight dyspnœa, frequent and trouble-

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some cough with expectoration of sputa differing from the rusty colored sputa of pneumonia; being expectorated in separate, dark red sputa, combined with a certain quantity of tenacious mucus, resembling the plumb colored expectoration which occurs in pulmonary apoplexy, and perpura hemorrhagica. On percussion there was some dullness posteriorly, at the base of the right lung, with minute crepitation. The chest symptoms taken as a whole, led to the belief that the right pulmonary artery was the seat of an embolism, and he was treated accordingly, and in ten days he was so far recovered, as to be allowed to be taken out of bed. In the act of doing this, he was attacked with unquestionable symptoms of phlebitis of the left leg, and on the second day after this attack, the left lung presented the same symptoms as had been presented in the right; from which it was inferred that an embolism had obstructed the left pulmonary artery. This was a very critical case for some time, but eventually fully recovered from the effects of the emboli.

A lady of 28, subsequent to her first labor, which was normal, flowed excessively. The sixth day the lochia became very fœtid but not diminished in quantity. The next day the lochia was intensely fœtid. She seemed very well in all other respects, except that she was very weak from loss of blood. The eighth day she was feeling better, ate a hearty breakfast, and half an hour afterwards the nurse found her in a state of collapse, gasping for breath, and unable to speak. Brandy, ammonia, and chloric ether were freely given, and an hour and a half later she was somewhat rallied, but ghastly pale, with an anxious, pinched look, pulse 110, respiration slightly increased in frequency, with no abnormal sounds about the heart and great vessels. She felt faint occasionally for several days, but was not allowed to raise her head off the pillow, and eventually made a perfect recovery.

A lady, on attempting to get out of bed on the twelfth day after a complicated labor, was seized with a sudden attack of what appeared to be syncope, fell on the bed, and was with difficulty recovered. An hour or two later she was found with pulse scarcely perceptible, complaining of excessive prostration, slight dyspnœa and tightness in the chest.

Another lady was suddenly seized on the ninth day after a normal labor, with faintness, sensation of sinking at the præcordia, singing in the ears, slight dyspnœa, and for some days afterwards there was cough and occasional expectorations of bloody sputa. Both these cases recovered perfectly, and were regarded as pulmonary thrombi.

Mr. Paget has published a case of pulmonary thrombosis from which he draws the inference that in certain circumstances, a great part of the circulation may be arrested in the course of a week, or a few days, (more or less,) without immediate danger to life, or any striking indication of what has happened. Virchow also found clots in the pulmonary

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artery in several cases, in which there had been no symptoms during life to give rise to a suspicion of their existence. The history of many fatal cases, renders it quite certain that fibrinous clots had existed for a considerable time, without causing any distress until some unusual exertion, induced a call for more blood than could be supplied through the obstructed vessel.

The prognosis is always very grave, but clots in the peripheral veins are certainly, frequently absorbed, and the circulation in the occluded vessels becomes as perfect as ever. It appears that the blood is almost sure to revert to its natural channel in process of time, unless the vein is completely destroyed. Reasoning from analogy it is fair to presume that the same happy termination may also occasionally occur in the pulmonary artery; and certain cases are explicable on no other theory. The second variety of thrombi, has scarcely been looked upon as a cause of death, and has been regarded as merely an evidence of how life has been terminated; but in some instances they are looked upon as a cause of death which might, possibly, have been averted, if we could prevent their formation, and so gain time for resolution of pneumonia, or other diseases with which they are associated. This brings us naturally to the

Treatment, which I will first take up with reference to this class of cases. The prevention of this class of thrombi is of the first importance, and diffusible stimulants, to urge on the languid circulation, such as brandy, ammonia, chloric ether, ammoniacal inhalations, etc., are clearly indicated. The alkalies, more especially the carbonate of ammonia, are the only agents with which we are acquainted, that have a direct power in diminishing the tendency to coagulation, therefore, they should be freely given when we fear the formation of pulmonary thrombi. A thrombus or embolism once having been formed, the alkalies have no solvent action, therefore, in these cases, ammonia should only be given as a stimulant, and should not be given for any great length of time. Ammonia in the blood, may be taken as a constant indication of exhaustion, and all depressing agents should be sedulously avoided. The most complete rest of body and mind, should be insisted upon. The patient should not be allowed to even raise the head from the pillow, and every mental emotion, as well as all mental efforts, should be studiously avoided. *The treatment* for the prevention of the general condition favoring the clotting process, consists of systematic exercise in the open air, cleanliness of the whole skin, good diet, and during gestation, occasional doses of aperient medicines. During labor, care should be taken to ensure the due and regular contraction of the uterus. Lactation is of the first importance in maintaining healthy contraction of the uterus, and promoting its regular involution, and thus averting many puerperal disorders. The enforcement of the recumbent posture, and the removal of all bodily and mental disturbances, the liberal allowance of nourish-

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ing diet, plenty of wholesome liquids, which tend to prevent the active absorption of foul or noxious matters, the giving of stimulants, bitter tonics, and mineral acids, constitute the general plan best calculated to meet the indications.

The practice of rubbing, kneading and other manipulations, including the use of starch or plaster casts, where venous clots are suspected, as in fractured limbs, phlegmasia dolens, and analagous conditions, is not unattended with danger, and in one case mentioned above, the application of a starch bandage seemed to be the exciting cause of a fatal pulmonary embolism.

F. W. GOODALL, M. D.

MEDICAL LEGISLATION.

By H. D. Holton, Brattleboro, Vt.

Mr. President and Gentlemen of the Society :—

In considering the subject of Medical Legislation, I desire to call your attention, first to some of the reasons why it is so difficult to secure the enactment of laws relating to medical subjects, such measures being advocated by the medical profession as most desirable and even necessary to the better protection of the health of the people, or for the purpose of furthering the ends of justice in the trial of causes between man and man as well as in criminal cases.

Secondly, to consider briefly some subjects which require attention from our legislature.

First, then, regarding the causes of failure in the past to secure desired legislation. There has been, and still is, a strong feeling against what is called "class legislation," hence when a bill is presented asking for the enactment of some law relating to subjects, not generally understood, although it may seem perfectly plain to the medical man, who has given much time to the consideration of the matter, yet the fact that only members of the medical profession are asking for the passage of the bill, at once there are arrayed against it all those naturally jealous of professional men, as well as the class who in health and strength, cry "that it is not possible for any good thing to come out of the medical profession;" but when sick and suffering, insist upon the most careful, painstaking and constant attention that it is possible for the profession to give them. This formidable opposition, crying "class legislation," is often sufficient to kill the measure; in fact, it might better be said, is *usually*

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sufficient to kill the bill. Again, if the bill is one of a sanitary nature, affecting in some measure enterprises in which considerable capital is invested, it is overwhelmed with objections, put with much subtlety by counsel paid to watch it until buried, while no one is paid to see that it is *not* buried, only some poor Doctor, perhaps appointed by a medical society without funds, who could only give of his time enough to launch it on its way, and then leave it to live or die by itself.

It must, however, be confessed that sometimes the impracticable enters so largely into the bill that there is nothing left for a judicious legislature to do but vote it down. We do not have to look far for the reason for this. The author of the measure having theorized upon the matter so long sees all the details of its workings with an enthusiast's eye, but does not recognize, even when his attention is called to the matter, that some of its provisions would be bad precedents; others contain paragraphs that would come more properly in regulations under the act itself, yet while they remain in it, they are a constant menace to its success, and often the immediate cause of its untimely end.

We now come to the consideration of the question, what, if any, legislation of interest to, or affecting the Medical profession, is at present demanded. We have but to recall the very interesting address given at our last annual meeting by President E. R. Campbell, on expert witnesses to remind us that we have in this a most important subject requiring careful legislation. As a result of that address, and in accordance with a vote of this Society, a bill was prepared after consulting with some of the leading lawyers of the State, which was introduced into the House at the last session of the Legislature, and referred to the judiciary committee composed of nine lawyers, who in due time reported "that it ought not to pass," for the reason that there was not any necessity for it. That the State ought not to pay witnesses in a case unless called by the State, and furthermore, that witnesses appointed by the court, thus making them impartial, would have such weight with a jury as in many cases to practically decide the case, and lastly, that by section five it would prevent counsel from introducing medical experts of their own, whom they might find would interpret some of the facts and symptoms more favorably for their side. All these objections being fully answered, and it being further shown that eminent jurists had denounced the present method of calling experts, and had outlined the course followed by this bill as the probable remedy, the legal gentlemen of the House turned their attention to amending it, and, as a result, so loaded it down with amendments, that it was engulfed and lost on the vote whether it should have its third reading. The following is the text of the bill:—

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AN ACT IN RELATION TO MEDICAL EXPERT TESTIMONY.

It is hereby enacted by the General Assembly of the State of Vermont:—

Section 1. In any action, suit or proceeding, civil or criminal, in which the testimony of a medical expert witness is desired by either of the parties, they may, at any time before or during the trial, file with the Clerk of the Court a written request for appointment by the Judge then assigned to hold said Court, of one or more medical experts, the number never to exceed three, in the discretion of the Court.

Section 2. It shall be the duty of the Clerk of any County Court, on receiving a written request for the appointment of medical experts, to at once transmit such requests to the proper Judge. Said Judge shall at once appoint a time and place where and when he will hear said request, and notify the Attorneys of the same; and at said appointed time and place, the said Judge shall hear said Attorneys in reference to said request, and if, on hearing, the Judge deems that the interests of justice require expert testimony, he shall, as soon as may be, designate by appointment one or more medical men, learned in the science of medicine, to act as such medical experts, and shall return to the Clerk said request with his order thereon, and the Clerk shall thereupon issue a subpœna to the person or persons designated, to be served in the manner provided by law. In case said Judge shall decide that said request shall not be complied with, he shall return the request to the Clerk with a statement thereon that the request is denied.

Section 3. Any person summoned as an expert under the provisions of this act shall attend as summoned, and shall make such examination as he may deem necessary, under the direction of the Court, and in the presence of the Attorneys in said case, and shall testify as a witness under the regulations and rules of the Court; but such person shall only make such examination in the presence of the Attorneys of both parties, and shall not hear any statements in reference to the case at any other time, and if such expert shall violate this provision, he shall not be allowed to testify.

Section 4. Such witness shall be paid for his attendance, travel and services, a reasonable compensation, to be allowed by the Court and be paid by the State.

Section 5. No medical expert witness shall be admitted to testify before any *Court* or *Magistrate* except as *hereinbefore provided.*

The second measure to be considered is also one introduced into the last Legislature, entitled, "An Act relating to inquests on the dead, and appointing Medical Examiners." This bill was similar to the law existing in Massachusetts and several other States. This met with less opposition. It was reported favorably and its passage recommended by the committee to whom it was referred, and passed the House, but

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met its death in the Senate, probably because it had no one to champion its cause. The following is the text of this bill :—

AN ACT RELATING TO INQUESTS ON THE DEAD AND APPOINTING MEDICAL EXAMINERS.

It is hereby enacted by the General Assembly of the State of Vermont :—

Section 1. The Judge of the County Court in each county, shall, in the month of December, appoint one able and discreet man, learned in the science of medicine, to be Medical Examiner for such county, which appointment shall be in writing, and recorded in the office of the Clerk of the Court. Such Medical Examiner shall hold his office for five years, and until his successor is appointed.

Section 2. Medical Examiners shall make examination as hereinafter provided, upon view of the dead bodies of such persons only as are supposed to have come to their death by violence, or whose death is accompanied by circumstances of suspicious nature and its immediate cause unknown.

Section 3. Whenever a Medical Examiner has notice that there has been found or is lying within his county, the body of a person supposed to have died by violence, or whose death is accompanied by circumstances of a suspicious nature, he shall forthwith repair to such place and take charge of the same, and if, on view thereof, and a personal inquiry into the cause of the manner of the death, he deems a further examination necessary, he shall, upon being thereto authorized by the Mayor of the city or the Selectmen of the town where the body lies, in the presence of two or more discreet persons, whose attendance he may compel by subpœna if necessary, make an autopsy, and then and there reduce or cause to be reduced to writing every fact and circumstance tending to show the condition of the body, and the cause and manner of the death, together with the names and addresses of the said witnesses, which record he shall subscribe ; before making such autopsy, he shall call the attention of the witnesses to the position and appearance of the body.

Section 4. If, on such view, personal inquest or autopsy, he shall be of the opinion that the death was caused by violence, he shall at once notify the State's Attorney of the county, or the City Attorney of the city, and a Justice of the Peace of the town in which the body lies, and shall file a duly attested copy of the record of his autopsy with such State or City Attorney, and with such Justice of the Peace, and shall also file a duly attested copy of such record with the Clerk of the County, and shall in all cases certify to the Clerk of the city or town wherein the body lies, the name and residence of the person deceased if known, or a description of his person as fully as may be for identification,

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where the name and residence cannot be ascertained, together with the cause and manner in which such deceased came to his death.

Section 5. It shall be the duty of the Justice of the Peace upon such notification, immediately to hold an inquest, which may be private, in which case any and all persons, other than those required by the provision of this chapter, may be expelled from the place where the same is to be held, and said Justice may also direct the witnesses to be kept separate so that they cannot converse with each other until they have been examined. The State's Attorney or some person directed by him, may be present and examine all the witnesses. An inquest shall also be held in case of death by accident upon any railroad, and the State's Attorney may direct an inquest to be held in the case of any other casualty from which the death of any person may result, if in his opinion it may be expedient or necessary.

Section 6. The Justice of the Peace may issue supœnas for the attendance of witnesses, and the persons so served shall be allowed the same fees, and their attendance compelled in the same manner, and they shall be subject to the same penalties as if served with subpœna on behalf of the State in a criminal prosecution in a County Court.

Section 7. The Justices of the Peace shall take the testimony of each witness in writing, and shall draw up and sign a report, in which he shall find and certify when, where, and by what means the person deceased came to his death, his name, if known, and all material circumstances attending his death; and if it appears that such death resulted wholly, or in part, from the unlawful act of any other person, the Justice shall state, if known to him, the name of such person whose unlawful act contributed to such death, which report, together with all testimony in writing certified by him, he shall return to the County Court next to be held in his County, together with the amount of the fees and expenses of such inquest, which, after having been duly audited by said Court, shall on the order of said Court, be paid out of the State Treasury.

Section 8. In case of felonious killing, the Justice taking such testimony shall take the recognizance of the witnesses produced before him, for their appearance before the County Court next to be holden in such County, in such sum as he shall deem proper.

Section 9. The Medical Examiner may, if he deem it necessary, call a chemist to aid in the examination of the body or of substances supposed to have caused or contributed to the death, and such chemist shall be entitled to such compensation for his services as the Medical Examiner certifies shall be just and proper, the same being audited and allowed in the manner hereinafter provided.

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Section 10. There shall be allowed to a Medical Examiner for any service by him performed under this act, such sums as shall be allowed to him by the County Court, to be paid by the County Clerk upon the allowance of the Court, and to be allowed to the Clerk in the settlement of his accounts with the State.

Section 11. Sections 3,934, 3,935, 3,936 and 3,937 of the Revised Laws are hereby repealed.

Another, and the last subject to which your attention is to be called by this paper, is one upon which the profession throughout the country are practically united, and which finds frequent and favorable mention in the Medical Journals of the day, and which has been formulated and become law in four or five States of the Union. Reference is here made to a thorough regulation and licensing of practitioners of medicine and surgery, by a board of State Examiners. At the last meeting of the American Social Science Association a resolution was adopted asking "that the American Medical Association appoint a committee to consider the importance of a more thorough education of physicians for entering upon their medical studies, and of a more thorough regulation of the medical curriculum, and of placing of medical colleges under State supervision" At the last meeting of the American Medical Association the section on State Medicine recommended the adoption of a resolution asking for uniformity in State Medical Legislation, that a thorough preliminary examination, three courses of lectures, and an examination by the Board issuing a license, be required. The license to practice be recorded in the office of the County Clerk, and that the licensing board be endowed with power to revoke a license on account of immoral conduct. This resolution, as well as the one from the Social Science Association, was adopted unanimously by the American Medical Association at its general meeting, Thursday, June 27. These expressions upon this subject without consultation, by bodies of the character of these, and representing so intelligent and wide-spread a constituency, shows that not only a few medical men, but the vast body of learned and scientific men of the country are earnestly agreed that reform in this matter must be sought. Of the numerous editorials and articles from correspondents which have appeared in the prominent Medical Journals of the country in the past few months, the following, expressing as it does, the convictions which after considerable study of the subject, have forced themselves upon my mind, will bear quoting in full.

The Medical Record says, "There can be no doubt that the feeling among the profession of this country in favor of enforcing by law, if necessary, a higher standard of medical education is rapidly growing. It is seen in the constant reference to the subject at the meetings of medical societies and in our current journals.

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The fight is between some 120 medical colleges and the thousand "professors" attached thereto on the one hand, and the medical profession at large, on the other. The professors have had the advantage heretofore, because they have made it their special business to kill all obnoxious legislation, while the general practitioner having no particular and immediate interest to defend, has let matters go on as they were. Those who like ourselves, have been contending for higher medical standards and removal of the licensing power from the men who confer medical degrees at $30 per head, are annually helped by the statistical and other work of Dr. John H. Rauch, of Ill. It is well to confront our readers and the public often with the figures regarding our medical men and medical institutions. There are now in the United States about 115,000 doctors, or one to every 533.33 inhabitants. In 1880 the ratio was one to 601.12; the oft quoted ratios of other countries are as follows :—

Russia (in Europe)	16:100,000
France	29:100,000
Germany	32:100,000
Austria	34:100,000
United Kingdom	61:100,000
United States	187:100,000

We have in this country 118 Medical Colleges, and the ratio of Medical schools to population in this and other countries is as follows :—

Austria	1:6,032,421
Belgium	1:1,884,163
Denmark	1:1,969,039
France	1:4,513,223
Germany	1:2,350,000
Italy	1:1,853,671
Japan	1:1,716,920
Norway	1:1,800,500
Mexico	1:1,100,890
Netherlands	1:1,015,142
Portugal	1:1,449,517
Russia (in Europe)	1:8,750,000
Spain	1:1,662,586
Sweden	1:1,526,300
Switzerland	1:848,700
United Kingdom	1:844,846
United States	1:518,846.

With such competition among schools, and with their existence dependent upon matriculants, it is impossible that stringent requirements for the graduation should be called for. Doubtless if matters were left

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to take care of themselves, there would in time arise a general demand among the public for graduates of the best class of institutions. But the "supply and demand" argument is not entirely adequate. There will always be a majority of people quite incapable of judging as to the qualities of a safe and wise physician. They buy the goods most obtrusively thrust at them. For the protection of the public health, and for securing the greatest good to the greatest number, it is necessary to regulate the medical supply by some artificial means.

State Boards of Licensers and Examiners, with powers to prescribe the qualifications both of those who wish to become medical students and of those who wish to become physicians, appear to furnish the best available means for promoting this end at present attainable. The work of some such a board as that in Illinois, as shown in the table, offers assurance of the utility of the method, comparison of the total number and classes of physicians in practice in Illinois, July 1, 1877, and July 1, 1887.

	July 1, 1877.	July 1, 1887.
Number engaged in practice,	7,400	6,180
Graduates and licentiates,	3,600	5,704
Non-graduates,	3,800	476
Per cent. of graduates and licentiates,	48.6	92.3
Percentage of non-graduates,	51.4	7.7

In the Journal of the American Medical Association, the editor says, "The only legitimate object for the enactment of State laws regulating the education and practice of medical men, is to secure an educated and skilful profession, and thereby protect the people from the disastrous effects of ignorance and imposition. To secure this most desirable object, laws must be so framed as to require every person proposing to study and practice medicine to have, first, a good knowledge of the elementary branches of literature, mathematics, physics and the natural sciences, with the mental discipline that such a degree of general education necessarily develops; second, the devotion of three years to the diligent study of the several branches of medical science and art, at least six months of each year to be spent in a medical college of recognized good standing, and during the second and third years, the college attendance must include clinical instruction in a public hospital, containing a daily average of not less than fifty patients. Third, the appointment of a competent State Board of Medical Examiners, charged with the duty of examining such persons as propose to commence the study of medicine, and grant certificates to those found qualified and register them as students, and also the duty to thoroughly examine all applicants for license to practice medicine and surgery in the State, and to issue licenses to those who are found qualified by the possession of a practical knowledge of all the recognized branches of medical science

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and art, and of good moral character. These three items must be essential parts of every law that can be executed in such a manner as to eliminate ignorance and imposition from medical practice, and afford the highest degree of protection to the public and individual health."

The same Journal formulates the following bill as comprising these general features, and as an aid to legislatures in framing the necessary laws.

AN ACT TO REGULATE MEDICAL EDUCATION AND THE PRACTICE OF MEDICINE AND SURGERY, AND TO PUNISH PERSONS VIOLATING THE PROVISIONS THEREOF.

Be it enacted by the Legislature of the State of ——

Section 1. A Board, to be known as "The State Board of Medical Examiners," shall be appointed by the Governor, subject to the approval of the Senate, consisting of nine members, whose duty shall be to examine all applicants for registration as students of medicine, and to examine fully all persons applying for license to practice medicine and surgery in this State. The appointees must be members of the medical profession of recognized ability and honor, and residents of the State not less than five years; but no member of any college or university having a medical department, shall be appointed to serve as a member of said Board. The term of office of the members of said Board shall be three years, and until their successors are appointed, provided, however, that the first appointees shall be divided into three classes, of three members in each class, the term of service of the first class shall expire in one year, and that of the second in two years, and that of the third in three years from the date of their appointment.

Section 2. Said Board of Medical Examiners shall elect a President, a Secretary, and a Treasurer. It shall have a common seal, and the President and Secretary shall be empowered to administer oaths in taking testimony upon any matter pertaining to the duties of said Board. Said Board shall hold meetings for examination at the Capitol buildings of the State, the first Tuesday of January, April, July and October of each year, and at such other times and places as the Board shall deem expedient. Said Board shall keep an official record of all its meetings, also an official register of all applicants for examination for a certificate as a medical student, or a license to practice medicine and surgery in this State. Said register for certificate or license shall show the name, age and time, he or she may have spent in both preparatory and medical study, together with the name and location of all colleges which have granted degrees or certificates of attendance upon lectures in medicine. Said register shall show whether such applicant was rejected or licensed under this act. Said register shall be prima facia evidence of all matters therein contained.

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Section 3. All persons hereafter intending to commence the study of medicine in this State, shall apply to the said Board of Medical Examiners for an examination and certificate of registration as students of medicine and surgery. It shall be the duty of said Board to personally examine all such applicants in the following branches of general education, viz.: English grammar, composition, geography, civil history, arithmetic and algebra, physics, and all the natural sciences, and at least one of the following languages, Latin, French, or German, and shall give certificates only to those whose examinations are satisfactory to the Board. And no person shall be credited for any part of the legal period of his medical studies prior to the date of his certificate of preliminary examination. All persons hereafter commencing the practice of medicine or surgery in any of its branches in this State, shall apply to said Board for license to do so. Applicants for examination shall be divided into three classes, to wit: Persons graduated from legally chartered medical schools not less than five years before the date of application for a license; second, all other persons graduated from a legally chartered medical school, and thrd, medical students taking a regular course of medical instruction. Applicants of the first class shall submit to examination upon the following named branches, to wit: materia medica and therapeutics, obsterics and gynæcology, practice of medicine, surgery and surgical anatomy. Those of the second and third classes shall submit to examinations upon anatomy, physiology, chemistry, materia medica and therapeutics, histology, pathology, hygiene, practice of medicine, surgery, obstetrics, gynæcology, diseases of the eye and ear, medical jurisprudence, and such other branches as the Board may deem advisable. The questions for examination of applicants of the first and second classes shall be the same in branches common to both. Said Board shall not license graduates of a date later than January 1st, 189 until satisfactory proof is furnished that the applicant has studied medicine and surgery at least three years after registration as a medical student after graduation; attended at least three annual courses of medical lectures of not less than six months duration each, including attendance upon hospital clinical instruction during the second and third courses, is of good moral character, and not less than 21 years of age. Applicants of the third class, upon completion of two full courses of lectures, of not less than six months duration each, can be examined upon the following named branches, to wit; anatomy, physiology, chemistry, histology, pathology, materia medica, and therapeutics. If said examination is satisfactory, it may issue a certificate that the applicant has passed a final examination in these branches. All examinations shall be both scientific and practical, but of sufficient severity to test the candidate's fitness to practice medicine and surgery.

Section 4. All examinations shall be in writing, unless otherwise re-

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quested by the applicant. In oral examinations the questions and answers must be of a fundamental character, and such as can be answered in common by all students of medicine. When desired, said examination may be conducted in the presence of the Dean of any medical college, or the President of any Medical Society in this State. If said examination is satisfactory, the Board shall issue a license entitling the applicant to practice medicine in this State. The votes of all the examiners shall be yes or no, and written with their signatures, upon the backs of the examination papers of each candidate for the respective branches. A license shall not be issued unless the applicant passed a satisfactory examination on at least three-fourths of the branches required by this act. Said examination papers shall be kept on file by the Secretary of said Board, and shall be prima facia evidence of all matters therein contained. All licenses shall be signed by the President and Secretary of the Board, and attested by the seal thereof. The fee for examination shall be fifteen dollars for each applicant of the first and second classes, and twenty dollars for each applicant of the third class, and a fee of five dollars shall be charged for each examination in preliminary education. It shall be paid to the Treasurer of the Board, and applied towards defraying the expenses thereof.

Section 5. The Board may, by a unanimous vote, refuse to grant or may revoke a license, for the following causes, to wit: Chronic and persistent inebriety, the practice of criminal abortion, or for the publicly advertising special ability to cure diseases, that in the opinion of said Board it is impossible to cure. In complaints for violating the provisions of this section, the accused person shall be furnished a copy of the complaint and given a hearing before said Board, in person or by attorney, and can finally appeal from the decision of said Board, to the appointing power thereof.

Section 6. The person so receiving said license, shall file the same or a certified copy thereof, with the Clerk of the County Court in, and for the county in which he or she resides, and said Clerk of the Court shall file said certificate or copy thereof, and enter a memorandum thereof giving the date of said license, and the name of the person to whom the same is issued, and the date of said filing, in a book to be provided and kept for that purpose, and said Clerk of the Court shall each year, furnish to the Secretary of the Board, a list of all certificates on file at his office, and upon notice to him of the change of location or death of a person so licensed, or of the revocation of the license granted to such person, said Clerk shall enter at the appropriate place in the record so kept by him, a memorandum of said fact, so that the record so kept by said Clerk of the Court shall correspond with the records of said Board so kept by the Secretary thereof. In case a person so

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licensed shall move into another county of this State, he or she shall procure from the Clerk of the Court a certified copy of said license for which no charge shall be made, and shall file the same with the Clerk of the County Court in the county to which he or she shall remove. Said Clerk shall file and enter the same with like effect as if the same was the original license.

Section 7. This act shall not apply to commissioned surgeons of the United States Army or Navy, to physicians or surgeons in actual consultation from other States or Territories, or to actual medical students practicing under the direct supervision of a Preceptor.

Section 8. Any person shall be regarded as practicing medicine or surgery within the meaning of this Act, who shall append the letters M. D. or M. B., to his or her name, or repeatedly prescribe or direct for the use of any person or persons any drug or medicine, or other agency for the treatment, relief or cure of any bodily injury, infirmity or disease.

Section 9. Any person practicing medicine or surgery, in this State, without first having obtained the license herein provided for, or contrary to the provisions of this Act, shall be deemed guilty of a misdemeanor, and upon conviction thereof, shall be punished by a fine not less than $50 or more than $100, or by imprisonment in the county jail for a period of not less than ten or more than ninety days, or both fine and imprisonment. Justices of the Peace, and the respective Municipal Judges, shall have jurisdiction of violations of the provisions of this Act. It shall be the duty of the respective county attorneys to prosecute violations of the provisions of this Act.

Section 10. All Acts or parts of Acts now existing not in accordance with the provisions of this Act are hereby repealed.

Section 11. This Act shall take effect and be in force from and after its passage.

That any of these measures should become laws it will be necessary that the medical profession shall by personal effort, and through the press of the State, present to the people the reason why it is asked that these principles should be incorporated in the laws of the State. When public opinion becomes educated and enlightened, as has that of the medical profession, then, and not till then, shall we see the work accomplished. Go then and preach this gospel of reform in each of your towns.

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SOME OBSERVATIONS ON THE CAUSE OF DISEASE.

By Dr. C. W. Peck, Brandon, Vt.

Disease is a pathological condition. We have many kinds and several classes, arising from a multitude of causes, but that class of diseases to which I shall have occasion to refer most frequently will be the zymotic, or, as they are more recently called, the enthetic.

I am a believer in the germ theory of disease. We are unquestionably surrounded by an atmosphere bearing on its bosom myriads of germs, nameless and unknown kinds, benign and malignant, generated from many complex conditions; but for the development and reproduction of these germs certain conditions are necessary. These conditions are many times to be found in the human system, under the various unsanitary surroundings in which they are placed, and these conditions are not to be ignored in estimating our chances of recovery from pathological lecions, but to be considered as important factors in each and every case.

As medical observers you will all bear me out in the statement that there is almost as much difference between different cases of the same *class*, produced unquestionably by the same kind or family of germs or poisons as there could be between two very different diseases. The reason for this, I shall claim, lies in the pathological or unsanitary conditions of the individual so attacked. It is a fact frequently observed that some of the severest forms, the most malignant types of scarlatina, diphtheria, typhoid fever and other diseases of this class, come many times from the mildest and most benign forms. The reason for this is that the individual so attacked is laboring under a pathological condition, although perhaps wholly unaware of it.

The first great class of cases to which I would call your attention is the inflammations attendant upon parturition. You will call to mind the controversy which took place three or four years ago between Drs. Barker and Thomas of New York, as to the cause of child-bed fever. Dr. Thomas claimed that it was of local origin, while Dr. Barker maintained that it was a disease of the blood, or a general disease. I think both of these gentlemen were in substance correct. The blood and secretions of the pregnant female, during the growth and development of the fœtus are in a peculiar toxæmic condition. This condition, when properly considered, explains many of the serious results which we sometimes get in what seems at first mild and harmless inflammations. This great class of diseases attendant upon parturition depend upon two great causes: first, the condition of the individual; second, her contact with special poisons. We may have puerperal inflammations

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due to the first or second cause, or to both. Our patient may be suffering from puerperal peritonitis, cellulitis or metritis, and yet have no other poisons to contend with save those floating in her own blood, generated only by the conditions of her pregnancy or unsanitary surroundings. This would be Dr. Barker's puerperal fever. We will now add to the fluids of the system so impregnated with morbid material the specific germ of Thomas, and we have the *second* cause added to the first, both operating against the vital forces of the patient. You can imagine the critical condition. If the two causes are existing in one case simultaneously, both local and general measures of treatment are advisable. Is it not a matter then of great importance to decide, if possible, whether your patient is suffering from the one cause or the other, or both? The question might naturally be asked, what conditions tend to produce the first great cause? I answer, bad hygienic surroundings, improper food, dissipation, imperfect digestion, and exposure to cold. Pregnancy, although a natural condition, changes the mother's secretions many times to a pathological condition loading them with certain materials which make her less able to resist inflammations from bruises and lacerations by instruments, as well as making her almost powerless to resist special forms of poisons such as come from erysipelas, septicæmia, pyæmia and other diseases of like nature. The disease known as "Thrombosis" is unquestionably due to that hyperonotic condition of the blood in which we have an excessive proportion of fibrin and serum over the other constituents, thus making it liable to coagulation. "Uræmic convulsions" is a disease of the first cause, as well as "puerperal mania." Among those due to either, or both, may be mentioned phlegmasia dolens, phlebitis, and mamary abscess. Among the class of cases most likely due to the second great cause (special poisons) are "puerperal septicæmia" and "pyæmia," and the severer forms of puerperal "metritis," "peritonitis," and "cellulitis." Judging, then, this class of cases from these two great causes, I am led to the conclusion that quite as much depends on the primary condition of the patient in causing the diseases of parturition as upon any special poison or germ with which the mother may come in contact. It is a fact of no small importance in estimating the cause of contagious diseases that a proper condition be furnished for the germ's development before it can become contagious. This condition is admirably supplied in any one whose surroundings are in any way conducive to an abnormal condition of the blood and secretions, and especially is this true of pregnancy. I think the general tendency of the profession is to look for some special germ for the cause of many diseases that we are called upon to treat. We seem to fail to make self-examination in medical matters as in many others. We are quite ready to charge the cause of disease to a special germ, when in fact it is many times bad digestion, unsanitary surroundings, or dissipation that has caused the mis-

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chief. The old proverb that "a steady dropping wears away a stone" is true, but no more a truth than that little by little we poison ourselves in a thousand ways, and unconsciously prepare our blood to be the proper nidus for the development and reproduction of poisonous germs that mean death, when, in fact, if there was no appropriate nidus for the germs' development, there would be no reproduction of the germs and no contagious disease.

The next class of cases to which I would invite your attention is inflammations of the throat and lungs. Diphtheria is a disease known to be contagious, known to be produced by a special germ or poison. Unquestionably the severer forms are, but the meaning of that word "diphtheria" is a patch in the throat. There are many cases with a diphtheritic patch in the throat attended with high heat and bad symptoms for twenty-four or forty-eight hours only that seem to abort as it were and come to nothing. There are unquestionably many cases of quite severe sore throats with patches, and high heat, that have not come in contact with any special poison outside of themselves, but the conditions existed in the individual, and only needed an extra exposure to cold, an indigestible dinner or supper, or extra fatigue, to bring about the inflammatory deposit so characteristic of diphtheria, and from this disease caused by any of these simple causes there is no doubt that a severe form may be produced in another individual furnishing a proper nidus for the development of poisonous diphtheritic germs. We have every grade of severity sometimes in the same family, and sometimes one severe and malignant type attendant upon all. It is as thoroughly proven that this disease is caused by a special germ as any of the so-called contagious diseases. There can be no doubt that a child, thinly clad, poorly fed on unwholsome food badly digested, sleeping in an ill-ventilated dwelling with poisoned atmosphere, exposed to the cold damp air of some unsanitary locality when once subjected to the poisonous germs of diphtheria, will have the malignant type of this disease, notwithstanding the poisonous germs may come from a mild case. There can be no doubt that this child is much more susceptible to these poisonous germs than the child who sleeps in a well-ventilated house, breathes good, pure air, and eats good, wholesome, properly prepared food, and is warmly clad that the blood may be kept at a normal temperature with the least possible strain on the nervous system, or that the last-named child, if exposed to the germs coming from a malignant case of diphtheria, would stand a good chance of recovery, and not have the malignant form of the disease; all from the fact that the condition of the first child furnishes the proper nidus for the reception and development of the more poisonous germs, whereas the second one does not. How few people realize that while they are studiously avoiding the poisonous germs of diphtheria in others that their chief danger is within their own systems, their own hygienic

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surroundings; that the poisonous exhalations from their own unwholesome sink-spouts and slop-jars, their bad food and improper ventilation are laying a poisoned foundation, so that when the extreme case develops the poisonous germs that spread contagion through the city or hamlet, they have only to come in contact with them and the deadly work is done.

If there is any one disease more than another that demonstrates the importance of conditions in the contagiousness of disease it is that never ceasing destroyer of life, that scourge of the human race, consumption; a disease that firmly sustains the reputation of killing one-sixth of all that die of disease in spite of science and medical skill,—a disease that has been called hereditary, and not contagious, for centuries,—a disease that is to-day taking its place among the list of contagious diseases, and I think justly so, but under circumstances that demonstrate the absolute necessity of having the soil carefully prepared for the reception and development of the germ. Tuberculosis is not as contagious as the small-pox or measles, but there are certain conditions in which you could as surely predict the contagiousness of tuberculosis as of small-pox, and these conditions are to be found in the individual's fitness for the reproduction and development of the germ that causes the disease.

I am aware of the fact that I am assuming a position in the advocacy of the germ theory hard to prove, and many may justly take radical objections, but there is a something that convinces the careful observer of chronic lung troubles that his patient suffering from tuberculosis is in the grasp of a force,—call it what you will,—that goes to the very centre of life to destroy it, far beyond any other inflammatory disease of this regian. Although its beginnings are slight—a little elevation of temperature, a little acceleration of the heart's action, a slight shade of dullness at the apex of one lung, with a little elevation of the pitch of the natural respiratory murmur (a very trivial affair seemingly), and a little cough or shortness of breath,—yet from these little beginnings you may number the days of your helpless victims, and you can sit by as powerless as the dead while they waste before your eyes. All the skill of the world's most renowned physicians, all the boasted science of medicine, has never been able to say *veni, vidi, vici;* yet this disease, with all its unfavorable record, if taken in time and properly managed may in a large majority of cases be perfectly cured. Actual demonstration has proved that the best treatment is to put your patient in a condition best fitted to resist the reproduction and growth of the tubercule baccilli, either by medicine or climate, or by both. If conditions have anything to do with causing this disease, then, in so far as you remove the unfavorable conditions, you institute a cure. What are the general conditions that are so instrumental in causing this disease? Actual demonstration has found that all patients suffering from an inflammation of the air passages, if confined

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in cold damp air, without sun-light, will soon take on a tubercular disease, and, if confined with cases of tuberculosis under such unsanitary surroundings, the progress of the disease is very rapid. Many individuals are born with such weak lungs that when by some unfortunate exposure an inflammation is once set up in them they have not the powers of resistance to remove and repair the injury, even under good sanitary conditions, and death is the result, where some other individual would have repaired a similar injury without either medicine or care. This demonstrates the fallacy of depending too much upon local medication in tuberculosis. You must fortify your patient with an improved general condition under more favorable sanitary surroundings. Why is it a fact that confined damp air will produce or generate tubercule baccilli in the human system, when the same individual, suffering from the same trouble in an elevation twenty-two or twenty-five hundred feet above the level of the sea, in a wild mountainous region, will eliminate the tubercule baccelli, take on flesh and get well? But such is the fact. Again, the same individual returning to the same lower stratas of damp air takes on the same tuberculous condition, and by again repairing to the above named altitude and locality regains vigor and health. Why is one locality so much more conducive to diseases of any kind than another, unless it be the fact that in certain localities certain poisonous germs exist, that, when brought in contact with certain individuals, under certain conditions, produce a certain disease as the usual result? Is there any other reasonable explanation than that this disease, like many other contagious diseases, is produced from poisonous germs that have been produced and are being produced every day by conditions from other germs? Otherwise, they are of Divine origin, and the "germ theory" is not true.

In conclusion, allow me to raise a few questions and state a few facts. Science has proved beyond a doubt that there is no such thing as spontaneous generation of life. In other words, the dead produce nothing; only the living germs can produce more living germs. Therefore I assume that all life must be of Divine origin. Yet the germs of contagious diseases are living organisms, have life, and reproduce more germ life. If the "germ theory" is true, contagious germs must be produced from certain conditions and from original germ life which was of Divine origin. If this were not the case, when one class of contagious germs was once exhausted, there would be an end of that disease for ever. Science has also settled the fact that we are surrounded by germ life. There can be no question about their being in the air we breathe, in the water we drink, and in the food we eat; they permeate the most vital parts of our system. If the "germ theory" is true there can be no doubt that contagious germs travel or are conveyed in some way through this medium in which we live, called air. This being the fact they must be our companions in health and disease, and our only safety is in guarding ourselves by proper sanitary surroundings.

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THE OATH OF HIPPOCRATES.

By Dr. J. Draper, Brattleboro, Vt.

When Daniel Webster commenced his famous reply to Hayne, he prefaced it by remarking that—"When the mariner has been tossed for many days, in thick weather and on an unknown sea, he naturally avails himself of the first pause in the storm, the earliest glance of the sun, to take his latitude and ascertain how far the elements have driven him from his true course. Let us imitate this prudence," said he, "and before we float further, refer to the point from which we departed, that we may at least conjecture where we now are."

In a survey of the medical profession, I conceive some such point must be taken to enable us to make out our present position; and it has occurred to me that it can do us no harm, at least for a brief half hour, to swing back to Hippocrates, and stand with him at the open gateway to our sacred profession.

Hippocrates is not like Æsculapius, a mythical character. The latter, living in the shadowy age of history, is a deified being. Hippocrates was one of those who stand out in the light of ages as an embodiment of the possibilities of which man is capable. Few there are in any age who are thus endowed; but few as they are, they stand as witnesses to human capabilities—that the world as yet is far from realizing. The aphorisms of this Father of our profession still cover in their scope all that the intervening 2200 years have developed, and likewise project their author to the extreme limit of our present professional horizon. In evidence of this far-sightedness, it is sufficient to note one or two of those concentrated maxims which show him to have been no empiric, but the true hand-maid of nature, as the true physician of modern times is proud to acknowledge himself to be.

1.—"Those things that are or have been determined by nature, ought not to be moved or altered; but should be left alone."

Here is recognized in full the doctrine of self-limited disease, and full faith in the vis medicatrix natural to which such maladies may be safely intrusted. We venture to say he was not the man to talk of the breaking up of a fever of zymotic disorder, or to instruct his pupils in any tricks of practice. We can rather picture him calmly observant, philosophical and sagacious, pointing out to them its origin, and dictating preventive means, while simply directing the comfort and proper nursing of the victim with such remedies as the violence of the disease demanded in its acute stage, and such supports in the convalescent as might be indicated. Particularly did he embody our ideal of the sanitary physi-

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cian of to-day; directing steps for the prevention of pestilences, while meeting with vigilant eye and skilful hand, the wants of the plague struck and the panic stricken.

2.—Again, "Those who are grieved in any part of the body, and are scarce sensible of their grief, have a distempered mind." This is a remarkable observation, recognizing a disordered mind by the only means we now possess, that of observation, and seemingly not connecting such disorder with supernatural causes; as seems to have been common at the beginning of the Christian era, and indeed for many subsequent centuries. These, no less than the memorable first aphorism, mark not alone, far seeing but correct sight. From his time to our own, it has been held true that "Life is short, and Art long, the occasion fleeting; experience fallacious, and judgment difficult. The physician must not only be prepared to do what is right himself, but also to make the patient, the attendants, and externals co-operate." The oath of Hippocrates lets us more deeply into the man, and the physician, than even his aphorisms.

The first fact to be noted in this ancient oath is that our art at its birth was wrapped in a blanket of secrecy, to wit:—

"I swear by Apollo the physician and Æsculapius, and Health and All-heal, (or in some renderings Hygeia,) and all the Gods and Goddesses that, according to my ability and judgment, I will keep this oath and this stipulation, to reckon him who taught me this art equally dear to me as my parents, to share my substance with him and relieve his necessities if required; to look upon his offspring in the same footing as my own brothers, and to teach them this art if they shall wish to learn it, without fee or stipulation; and that by precept, lecture and every other mode of instruction, I will impart a knowledge of the art to my own sons, and those of my teachers, and to disciples bound by a stipulation and oath according to the law of medicine, but to none others."

Waiving in this place critical comments upon that section just read, until the whole may be surveyed, we note a single point upon which the members of the profession in our day have given too little heed. I refer to the extreme care with which entrance to the ranks of the profession was guarded, and the extreme respect, even reverence inculcated for the Masters in the Art. We cannot but feel that this sentiment is too little regarded now. We can indeed understand how such a Master as Hippocrates might have commanded respect, still he doubtless observed, as human nature is the same at all times, that Masters were not always held in the esteem they deserved, and not always respected where they should be, by their pupils. When we recall our College Professors, and the levity with which students were prone to criticise them, we must count it as one evidence of wisdom, at least that respect was enjoined under the solemnity of the professional oath.

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The second point always to be remembered, but too often forgotten or unheeded, is the obligation to preserve a consistent correspondence between preaching and practice, to wit :—

"I will follow that system of regimen which, according to my ability and judgment I consider for the benefit of my patients, and abstain from whatever is deleterious and mischevious."

A third general clause interdicts the prostitution of the Art to other purposes than those for which it was instituted, viz : the healing of the sick and the prolonging of life, to wit :—

"I will give no deadly medicine to any one if asked, nor suggest any such counsel ; and in like manner I will not give to a woman a pessary to produce abortion."

The fourth general declaration binds the subscriber to the most rigid observation of the rules of morality, to wit :

"With purity and with holiness I will pass my life, and will practice my Art. I will not cut persons laboring under the stone, but will leave this to be done by men who are practitioners of this work."

"Into whatever homes I enter, I will go into them for the benefit of the sick, and will abstain from every voluntary act of mischief and corruption ; and further, from the seduction of females or males, of freemen or slaves.

"Whatever, in connection with my professional practice, or not in connection with it, I see or hear in the life of men which ought not to be spoken of abroad, I will not divulge, as reckoning all such should be kept secret."

The final clause calls down, after the manner of ancient oaths, dire evils upon the head of him who violates it, to wit :

"While I continue to keep this oath unviolated, may it be granted to me to enjoy life and the practice of the Art respected by all men in all times ! But should I trespass and violate this Oath, may the reverse be my lot !"

Only one sentence in this Oath is ambiguous, or of doubtful interpretation, to wit :—

"I will not cut persons laboring under the stone, but will leave this to be done by men who are practitioners of this work."

In its literal rendering, in the light of the present time, we should say that it was a recognition of specialists ; an operation requiring especial skill, hence not to be attempted by the general practitioner ; or belonging to the domain of surgery rather than the practice of medicine. But in the connection in which we find it, a certain obloguy seems to attach to it as to procuring abortion. This has given rise to various conjectures, but with no settled result, and needs not be enlarged upon by us.

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Leaving this out of account altogether, the Oath as a whole is remarkable as embodying some of the best and truest ideas of that and later times, even to the present.

We must not forget that since that early time, an Art has been exalted into a profession. With this change, secrecy has been expanded into general knowledge. To-day, he who has acquired highest wisdom in his profession is highest esteemed; while he who conceals or attempts to conceal what he may claim to be a secret in his Art, is justly viewed with suspicion and distrust. The time has come when the liberal professions have no secrets; and he who claims such is an imposter. Still in looking back to the days of Hippocrates, the Medical Art was in the hands of but few true disciples, and those few were intrusted with a heavy responsibility. In the light of two thousand years, we can see abundant reason of the most convincing sort, for the introduction in the oath of the Father of Medicine, of the obligation of secrecy. Himself endowed with a foresight beyond ordinary man, and a sagacity that has hardly since been equalled, he saw danger in openly declaring the truths which, even in that far off time, were clear to his own vision; not danger to the physician, but danger that the principles and germs of the Science of to-day might be dissipated and lost to the generations then unborn. The preservation of these seeds of truth was of first importance; to the coming lives they must be preserved, nursed, developed by those who were destined to be identified with the history of the Medical profession.

The Oath of the Father therefore, preserved, as in a hot-bed, the germs of Medical Science, which had they been sown broadcast would have fallen most probably principally on stony ground, or shallow soil, where with little root they would speedily have withered away.

As a whole, it is well to refer to this Oath. Its principles, barring secrecy, which in our day as earlier tends to clannishness, are still undecayed, and can never become obsolete. They cannot be followers without exaltation of professional character. They cannot be disregarded without deterioration of character, professional and otherwise.

Briefly to recapitulate, the novitiate swears by everything holy, he will consecrate his best abilities to his calling, that he will reckon himself bound to him who teaches him, by a tie equal to the filial bond, and regard the children of his preceptor, as those of his own blood, and moreover impart to them in turn, his knowledge of the healing art, if they desire it, freely and independently of reward; that he will moreover, exert and emphasize his knowledge by example as well as precept, pursueing that course of living in his own life which he would advise others; that he will ever bear in mind that his mission is to prolong not to shorten human life, and particularly abstain from all advice tend-

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ing to check it in its inception; and that his daily walk and conversation shall be such that he may be trusted to enter into the home circle,—the holy of holies—without fear, or suspicion; and if we accept the ambiguous clause already commented upon relative to the practice of lithotomy, and adopt that interpretation which construes it to mean that those difficult and dangerous operations upon special organs, or organisms, which are performed by those who devote themselves to such special work should be referred to them, thus virtually declaring he will refrain from all operations which, from their nature involve risks which ought not to be taken by one not fully experienced in the same, and by which human life might possibly be jeopardized, we have a code of ethics which, though more than two thousand years old, yet commands endorsements and is far from obsolete. The wonder is that there was so much virtue in those heathen times incorporated into the very primer of our professional literature! Verily we may ask, have we made any advance? In the Constitution of our own State Society, I find none of these bottom principles intimated, save in a single Article (V), whereby is provided a way to eject from the fraternity any one "Guilty of intoxication, or irregular practice, or of gross immorality."

The Constitution of that Century old Massachusetts Medical Society, makes any one convicted of any crime, or of any treasonable attempt to disorganize or destroy the Society, or any attempt at description as to required qualifications, likewise liable to ejectment.

It is obvious by comparison of the modern codes with the oath of the Father of Medicine, that the tendency has been to lose sight of the principles in the practical codes of Laws.

It is said of Rufus Choate, toward the end of his all too brief and brilliant career, that being remonstrated with in respect to his over-work, and told that he would ruin his constitution if he persisted; he replied, that "in his case the constitution was gone already; he had been living for years upon the by-laws." Must this be said of our profession? God forbid!

Whatever may be said of the Hippocratic Oath, this much we may admit:—

He who lives up to all the principles detailed in it will assuredly merit confidence. Instead of the obligations of the Ancient Oath to prompt us to duty and keep us true, we have to-day the obligations of Christianity to guide us and to reward us.

"One of the most important duties of the profession to-day, and one which I cannot pass without special note, is whom to guide into the ranks; whom to encourage, and whom to dissuade. There is no doubt that the number of professional men generally, is in excess of the demand every where, and there is too much reason to believe that too little preliminary preparation on the part of those entering the profes-

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sion is insisted on. There are too many third-rate men in all the professions. The remark made to me by a gentleman of eminent business capacity a few years ago relative to a young clergyman of very mediocre abilities, I have always remembered. He said he was amazed to see—

"What feeble means the Lord employs,
To do His sovereign will."

I fear similar remarks might apply to our own calling. There is great advantage in a liberal education, apart from professional acquirements.

Much as native ability is to be relied upon, it is hardly to be depended upon alone. Polish is not to be overlooked, nor underestimated, notwithstanding the declaration of a local oracle in this town some years ago, to the effect that as applied to boots, "it spoils the leather."

Education in all its broad scope enlarges native abilities, and enables a member of any one of the professions to meet more fully his special work. The change in the curriculum of many of the Medical schools—notably in Harvard—within a few years, tends to give to the public better qualified physicians, and altogether such is the tendency at present every where. But the prime question of whom to advise to enter our ranks, remains to be decided. I hope this point will excite discussion.

There are certain natural qualities which seem to predestine individuals to different callings, and these should be recognized first.

Whatever be the motive or motives prompting one to enter, it should not be for pecuniary consideration alone. One's ambition may lie in that direction; but there are plenty of money making vocations outside of the professions.

One of the foregoing motives in all the professions must be of a more exalted kind at least, than pecuniary consideration.

The clergyman must bear in his mind a service to humanity, more exalted than the earthly reward. The lawyer should also recognize above the human code of laws, a fealty to Divine justice.

Tolerance is doubtless a virtue that our profession needs to cultivate. When we consider the faultiness of human nature generally, we should be mindful that we too are no exceptions.

We belong, we flatter ourselves, to that great body of men who in our day throughout the civilized world, is looked upon with a faith, a trust and a reliance that should constantly remind us that we are bound, as by an oath, sacred and solemn as that of the Father of our profession, to keep ever in sight the service we may render to humanity, as we are borne on by the resistless flight of time together towards that terminus which, despite even the resources of our Art, come sooner or later to all, yet after which the results of faithful labor, may serve us in good stead.

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While therefore, we pride ourselves as being enrolled in the ranks of a time honored profession, let us guard against encrusting ourselves in its shell and turning inward for sustenance, rather than feeling outward to grasp whatever we may to our enlargement and growth.

However much we may hold in contempt the dishonest pretender and the ignorant charlatan, we cannot ignore that there are those not of our school and name, who yet fall not under the classes just named.

So far as a sound, anatomical and physiological knowledge of the human system forms a basis for any man's practice, whether or not we agree with his theory, we need not condemn him wholly; nor can we assert that he does not do humanity a service, but without this basis of sound foundation—knowledge of the human economy—there can be no fraternization, and should not be by our profession. A knowledge of the human system and its laws is the basis of all sound Medical practice, as a knowledge of the Divine laws exemplified to us in the life of Jesus of Nazareth, should be the basis of of Christian life and practice; and no school or sect based upon either should be wholly condemned. Schools and sects emphasize certain principles, or factors in scientific fields or religious thought, hence sometimes cramp the science and distort the religion.

Only by being always learners, always open to light from whatever crevice it may come, may we be able to expand, to grow, and to meet the demands of our profession to the fullest extent.

Neither Medical Ethics, nor the creeds of the churches, must be suffered to hedge us in. If they do, their bonds must be burst and the shells must go, as the husks and coverings before the swelling and developing and ripening kernels of natural growth in this world of ours.

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ANÆSTHETICS,

OR, SOME INDICATIONS AND CONTRA-INDICATIONS FOR THE USE OF ETHER AND CHLOROFORM.

By Dr. O. W. Phelps.

Gentlemen of the Vermont State Medical Society:

It is with much hesitation that I have undertaken to prepare a paper to present to this Society, composed of so many men distinguished in the profession. My only hope is to present a text for discussion which I hope may follow, not by startling you with any original ideas or theories, but by reviewing briefly a limited amount of the literature of the past few years, on a subject which presents itself to nearly every one of us more or less frequently, dependent upon the line of practice we have adopted, or the location in which we are situated.

The use of Anæsthetics is a subject upon which there is a chance for much to be learned, as indicated by the great diversity of opinion in regard to the choice of agents; the proper mode of administering, and especially from an absence of any generally understood or well defined reason for using one or another agent in an individual case.

We recognize no specifics in general therapeutics, why should anæsthetics offer an exception to this rule? Certainly it should not, as seen by a study of the papers and monographs on these subjects for the past few years; but when we review the discussions on these papers in the Medical Societies, we find a very large majority of our best physicians and surgeons use either chloroform in all cases, or ether in all cases where they require an anæsthetic; or they use ether in surgery and chloroform in midwifery in all cases.

The desirableness of a local anæsthetic has long attracted the attention of surgeons, but none which promised much for general purposes was brought forward until cocaine was discovered about five years ago; since then much research and experimentation has produced several others which have proved more or less successful, but none have superceded cocaine.

But local anæsthesia has only a limited field of application in surgery at present, being pre-eminently useful in eye and throat surgery, and in a few short superficial operations.

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It is general anæsthesia that we are more often called upon to produce, and it is this that effects more decidedly the life and health of our patients and especially our own success and reputation. For this purpose the agents of most common application are nitrous oxide, chloroform and ether; the former being applicable only for short operations, finds its appropriate field limited mainly to dentistry.

I shall therefore confine my paper to chloroform and ether.

Ether was doubtless known in the 13th and 14th centuries, but the discovery of its use as an anæsthetic was reserved for America.

"To Sir Humphrey Davy unquestionably belongs the credit of first suggesting the idea of inhaling into the lungs some agent which would deaden sensibility during painful surgical operations."

"To Mr. Horace Wells, a dentist of Hartford, as unquestionably belongs the merit of first demonstrating this happy idea of using nitrous-oxide and sulphuric ether for this purpose.

"While to Dr. W. T. G. Morton, dentist, of Boston, is accorded the honor of first demonstrating at the Massachusetts General Hospital, in 1846, the anæsthetic properties of ether, and thus rapidly introducing it to general use in surgery."

Chloroform was discovered in 1831 by Mr. Samuel Guthrie, of Sacketts Harbor, N. Y., but to Simpson, of Edinburgh, belongs the credit of demonstrating its anæsthetic properties for surgical operations. And all must agree with Dr. Gross of Philadelphia in the statement that if America had never discovered anything else the world owes her a debt of everlasting gratitude, for by the use of these agents the most wonderful achievements in surgery have been made possible; while the relief to human suffering and the saving of life are a boon beyond estimate.

The choice between ether and chloroform as anæsthetics is a subject upon which opinions differ; both agents are admitted by all to be potent for evil as well as good; there is always an element of danger in their use. Most American surgeons believe ether to be the safer, while in European countries chloroform is given the preference—although of late chloroform is being more frequently used in this country—while in both there is a growing tendency to study the causes of danger in individual cases, and choose the anæsthetic best adapted to the patient and the operation. It becomes us, then, as practitioners of medicine, to acquaint ourselves with the indications and contra-indications for the use of these agents.

Ether kills most frequently by its action upon the organs of respiration and the kidneys.

Chloroform kills by its action upon the circulation and the nervous system. It kills suddenly and without warning, hence it is startling in its effects, and there is no doubt as to the cause of death, and such cases are sure to be published, and often to the detriment of the surgeon.

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Ether sometimes kills as suddenly, but more often does its damage in a way not as startling but equally fatal, thus giving the surgeon time to get out of the way, or advance some other theory for the cause of the fatal result, and save his own reputation, while the patient is as surely destroyed by acute or chronic Bright's disease, acute bronchitis or pneumonia, or left to suffer from the more chronic forms of these diseases, or others equally painful. It is probable if the full extent of these disastrous after effects of ether were better known, and attributed to their right cause, statistics which at present are unreliable would not show so small a percentage of deaths from ether as compared with chloroform.

One of the greatest dangers from the administration of ether is the presence of nephritis and Bright's disease; Dr. T. A. Emmet was the first to call the attention of the profession to this danger.

In the Medical Record for March 10th, 1883, is published a paper by Dr. R. Van Santvoord, of New York, in which he gives a report of several cases of death after the inhalation of ether by patients who had varying degrees of albuminuria—death occurring in from a few hours to eighteen days, with symptoms of uræmic poisoning, collapse, convulsions, etc. Albumen had either been previously found in the urine, or an autopsy revealed evidence of previous kidney disease.

Dr. Wesley M. Carpenter, of New York, in the Medical Record Feb. 6th, 1886, has a valuable paper on this subject; he closes with the following conclusions:

(1st.) Too great care cannot be exercised in examining the urine both chemically and microscopically of all patients who are to undergo surgical operations.

(2nd.) Chronic Bright's disease diminishes the safety of anæsthetics, especially sulphuric ether, as well as the safety of the operations.

Dr. A. P. Gerster read a paper before the New York Academy of Medicine April 7th, 1887, taking the ground that chloroform and ether are both to be employed as useful anæsthetics, each in its proper sphere. This view is generally admitted by the majority of unprejudiced surgeons, but in the lengthy discussions which followed the publication of this paper it appeared evident that too often the choice of an anæsthetic depended upon the individual temperament of the chooser rather than upon scientific convictions.

He says, "While chloroform is the more powerful agent and consequently attended with more danger at the time of operation, its employment was not followed by the secondary affections of the lungs and kidneys which were apt to result from the use of ether."

He admits that on the whole ether is safer than chloroform, but gives the following contra-indications to its use:

First. "In all affections impairing the renal functions, chloroform should be preferred."

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Second. "Ether is contra-indicated in the aged, or young children, and generally in the feeble there are catarrhal conditions of the air passages." He related three cases in his own practice of fatal or dangerous pneumonia; also three cases in Mount Sinai Hospital in 1886, two of which died; also five cases of severe bronchitis the same year.

Third. "Those who cannot be satisfactorily brought under the influence of ether."

In eleven out of one hundred and twenty-five cases at the German Hospital it was found impossible, with the greatest care, to produce the complete anæsthesia required. A change to chloroform was attended with the happiest results.

Dr. Gerster further says that while in general chloroform requires greater caution than ether, there is but one contra-indication to its use, namely—

"A weak heart, from whatever cause, be it fatty degeneration, or great anæmia, or from nervous influences, is the only valid objection to the use of chloroform." "The use of ether is also more than usually dangerous in these conditions, but chloroform is infinitely more so."

In cases of marked nervous depression or fright chloroform should not be used. It was a fact that most of the deaths from its use were in cases of slight operations, and he thought this was explained by the dread of the operation or the anæsthetic. In severe operations the patient generally nerved himself for the ordeal, and hence there was less danger from this source.

Bright's disease offers no contra-indication to chloroform, and serious pneumonia or bronchitis was rarely if ever produced by it.

In the discussion which follows this paper, which was participated in by men of wide experience, Bright's disease was not by most, considered a positive contra-indication to the use of ether, but cause for great care. Dr. Lewis A. Sayre used chloroform exclusively, while most of the others were as strongly prejudiced against it.

Reliable statistics in regard to the death rates and comparative frequency of the use of chloroform and ether are wanting. The annual of Universal Medical Sciences for 1888, reports five deaths from ether, and fourteen from chloroform; for 1889, six deaths from ether, and fifteen from chloroform.

Dr. Burton has written an article on anæsthetics, from a review of which I take the following. Between 1870 and 1885, 184 deaths have been published in England, as occurring under chloroform, and during the same period, twenty-eight deaths from ether, taking into account that chloroform is used in an infinitely larger number of cases in the United Kingdom than ether, and that it is nearly the only anæsthetic used out of the large towns and hospitals, it will be admitted that 184 deaths from it against 28 from ether, do not by any means show that it is the less safe of the two agents.

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He says, admitting greater danger from the use of chloroform, it is indicated in the following circumstances :—

(*a*) "In protracted operations about the mouth, jaws, nose or pharynx, which necessitate the mouth or nose being uncovered.

(*b*) "All operations needing the employment of the actual cautery, or lighted candles, lamps, etc., in the vicinity of the mouth, ether being highly inflammable, and when mixed with air detoning so that the incautious bringing of the apparatus near the light may lead to grave consequences.

(*c*) "Persons who are suffering from bronchitis, and those liable to that complaint, the emphysematous, (if the condition be very pronounced,) and as a rule, asthmatics bear ether badly, since it creates cough, and may clog the bronchial tubes with a quantity of excessive secretion.

(*d*) "In renal disease, where excessive ether is said to induce suppression of urine, so that if given at all in these cases, it should be with the utmost caution.

(*e*) "The vascular excitement to which ether gives rise contra-indicates its use for persons whose arteries are presumably brittle, etc.

(*f*) "In infants and very young children.

(*g*) "As ether always provokes rapid breathing and not infrequently coughing, it should not be used when these are prejudicial to the patient or to the success of the operation.

(*h*) "The presence of brain tumors, intestinal obstruction, and cancerous tumors is by some considered contra-indicatory of ether."—(Wood.)

To these the reviewer adds :—

1st. "All cases of brain surgery.

2nd. "Where the circumstances of the patient, or the requirements of the operation are such as to demand the securing of perfect rest by the free use of opiates, ether must be avoided on account of its action on the kidneys."

A mixture of alcohol, chloroform and ether called the A. C. E. mixture, has been used with the idea of conteracting the depressing effect of chloroform by the stimulating effect of alcohol and ether, and doubt, less this may be accomplished to some extent, but several accidents are reported from the use of this mixture which at best is unstable, and its use has not received general approval, and most will prefer to use a single agent, the effect of which is better understood. The mixture is shown in a paper by Dr. O. Keppler, to act first as ether and later as chloroform in smaller doses.

It is probable that by giving chloroform to abolish consciousness and then changing to ether, the unpleasant stage of the latter could be avoided more safely than by the use of this mixture.

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THE ADMINISTRATION OF ANÆSTHETICS AND MANAGEMENT OF PATIENTS.

The taking of an anæsthetic and submitting to an operation, is a matter of no inconsiderable moment to a patient, and hence is approached under a very great nervous strain, the degree of which varies according to the temperament of the patient, and this nervous strain has a decided effect on the case and success of both the anæsthitization and the operation; this condition may be very much modified either for better or for worse, by the manner in which the patient is approached with the anæsthetic.

The confidence of the patient is of paramount importance a few cheerful words of assurance, with a brief explanation of the sensations that will follow the inhalation of the anæsthetic, are of great service.

For an inhaler, many ingenious devices have been invented, of which Ormsby's is one of the best, as a small amount of ether is required by its use to induce and maintain full anæsthesia, and recovery is more prompt on this account, but perhaps none has fewer objections than a towel stiffened by a newspaper within, and folded in the form of a cone. Its advantages are its readiness at all times, and its cleanliness.

We should at first administer ether slowly and in small amounts, recognizing that the cough and irritation of the fauces are signals to allow the patient fresh air, as this passes off the ether should be pressed faster that the stage of excitement may be speedily passed over or avoided. During the first stage, words of assurance are of service, and as excitement is imminent, a firm command will often avoid an unpleasant struggle

The following propositions, taken from an article on the administration of ether, by Dr. H. L. Burwell, may not be out of place here.

1st. "Before etherization, the surgeon should satisfy himself regarding the presence or absence of heart disease.

2d. "The safety of the patient and the comfort of the etherizer largely depend on the use of pure anhydrous sulphuric ether.

3rd. "The best medium for the administration, is one in which the ether can be given in a condensed form or largely mixed with air.

4th. "As a rule the patient should have a brief, clear description of the sensation he is about to experience.

5th. "A room free from bustle and confusion before and after an operative procedure, is an essential for quiet etherization.

6th. "Ether should be administered on an empty stomach.

7th. "The knowledge of the effects of a glass of wine upon a patient is frequently an indication of the exciting or quieting effect that ether may have.

8th. "No mechanical impediment should exist to respiration.

9th. "The pulse respiration are the safe-guards of etherization.

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10th. "The less ether used in an operation, the better the recovery of the patient from the immediate effects of the operation.

11th. "A little ether with children goes a long ways."

Chloroform requires little additional to be said in regard to administration. The same general rules apply to it as to ether. A simpler inhaler may be used, and much less of the drug is required. The suffocating and excitant effects are much less, and hence much less difficulty is experienced from these causes. It is hardly necessary to add that whoever administers chloroform should be thoroughly prepared to apply the most effectual measures for the restoration of those cases of suspended respiration which often means death, and are liable to occur when least expected. Among which puncture of the right ventricle of the heart, with the aspirator needle seems rather heroic, although it is advocated by eminent authorities. Suspension with the head downward, has proved very effectual in many cases, and requires no previous preparation only presence of mind for its application.

ETHERIZATION BY THE RECTUM,

In the Medical Record for April 26th, 1884, is an editorial upon a novel method of administering ether described by M. Daniel Moliere, in the Lyon Medical, that is, the injection of ether vapor into the rectum. The idea was suggested to him by Dr. Axel Sverson, a Danish physician, who had employed this method.

Immediately following this editorial, great enthusiasm was aroused especially in New York, and other large cities, and numerous trials of the method were made, and cases reported, some favorable and some not.

Again in the number for July 19th, of the same year, is another editorial on an article by another Lyons physician, M. A. Pancet, who is of the opinion that the administration of ether by the rectum is a dangerous procedure, and one not to be adopted by careful surgeons, and closing with the statement that this is the view now held in New York.

The last which I find in the journals at my command on this subject, is the report of a paper by Dr. Williams H. Coggshall, of Richmond, Va , in the Medical Record, Sept. 20th, 1884. He claims that this method is not new but a revival of the process of Piragoff, who employed it in 1848, a year after the discovery of ether anæsthesia. Coggshall presented the details of fifty cases, being all he could find fully reported in the journals of that year. There were two fatal cases and several others with alarming symptoms, or unfavorable sequelæ.

The great element of danger however, and the reason why rectal etherization will never come into general use is because of the liability of the lower bowel to become over-distended, and the mucous membrane to take on inflammatory action, from the presence of the ether va-

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por. The Doctor concludes by advising only those to experiment with this method who could afford to take some risk.

ANÆSTHETICS IN MIDWIFERY.

When there are operations to be performed in Midwifery, there is little question as to the advisability or necessity of an anæsthetic. But in natural labor, opinions differ, and this difference hinges mainly on the question of anæsthetics increasing the liability to post partum hæmorrhage.

In a paper by Dr. Fordyce Barker, read before the New York State Medical Society, February, 1887, he says, what is termed uterine inertia is often but another name for uterine exhaustion, and this must certainly be less likely to occur when the nerve force and vital powers have been saved by the use of an anæsthetic. This uterine exhaustion may be, and often is, the result of prolonged labor, and while he was convinced that the effect of chloroform was often to prolong labor, he believed this apparent objection was counterbalanced by the advantage gained, even where the forceps has been made necessary for this cause. But in a large majority of patients, his experience led him to believe that the use of chloroform shortens labor. In his private practice he has had but one case of post partum hæmorrhage, and in that no anæsthetic was used.

In the discussion that followed, it was the opinion of most that chloroform on the whole, shortens labor, and properly used did not materially increase the danger of post partum hæmorrhage. Yet that risk should be guarded against. The general verdict seems to favor the moderate use of anæsthetics to dull the intensity of pain during long and agonizing labors.

Chloroform is chosen as the anæsthetic in midwifery with about the same unanimity that ether is preferred in surgery. Dr. Fordyce Barker considers it the safest and best anæsthetic in labor for the following reasons :—

First. "Its odor is to most persons much more agreeable, and it is much less persistent. Ether frequently causes irritation of the fauces and bronchi, and an annoying cough or choking is excited. The effect of which is bad, both on the patient and surrounding friends.

Second. "Chloroform is more rapid. The preliminary stage of excitement caused by ether is avoided. Much less of the agent is required, and we are able to use it for each recurring pain, the patient being comfortably free from anæsthesia during the intervals. Hence the period of danger is shorter, if danger there be.

Third. "With chloroform we are able to regulate the degree of anæsthesia with a certainty and security not possible with ether.

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Fourth. "The danger from anæsthesia by ether, where disease of the kidney exists, has not been noted from the use of chloroform."

Dr. E. L. Partridge uses chloroform in labor, but not without feelings that it is attended with risk; although very few cases of death have been reported from its use.

Dr. Savell, in the Obstetric Gazette, gives the following rules, the observance of which he believes would make the use of chloroform in labor perfectly justifiable:—

1st. Never give it to a woman who has a tendency to flooding during every confinement, or to those who have great relaxation of fibre, or a weak anæmic woman, in their eighth or tenth confinement except for necessity.

2nd. Do not give it where labor is complicated by severe vomiting, or with acute heart and lung trouble, unless there be an imperative demand for it.

3rd. It should not be given to complete anæsthesia except for operations, convulsions or spasms of the cervix, and then one person should devote his entire attention to it.

4th. The inhalation should be stopped directly if the pulse becomes weak or the respiration irregular.

5th. Do not give it if there be grounds to fear a fatty or enfeebled cardiac wall.

6th. In all cases where it has been given, there should be extra care taken to prevent post partum hæmorrhage.

Dr. Fancourt Barnes believed that the reason why chloroform is so well borne in midwifery, lies in the condition of the heart during pregnancy, namely, that of hypertrophy developed during gestation.

When an anæsthetic is required in labor with heart disease not complicated by kidney disease, ether should be preferred on account of its stimulating effect on the heart.

Finally, in obstetrics as in surgery, our anæsthetics should be used with reference to the patient to meet the indications with the judgment and discretion that we would use in choosing one from any other class of drugs to meet special indications. When we choose our anæsthetics in this way, foreigners will not all use chloroform, or Americans all use ether, in fact we shall not have enthusiasts for the use of anæsthetics; but the maximum of good results to be accomplished, and there will follow the minimum of unfavorable results to our patients.

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SEVENTY-SIXTH ANNUAL MEETING

OF THE

Vermont State Medical Society,

HELD IN BURLINGTON, OCTOBER 10-11, 1889.

The Society met at the Van Ness House at 10 o'clock A. M.

The meeting was called to order by Dr. J. M. CLARKE, President. Prayer was offered by the Rev. F. E. DEWHURST.

O God, Thou art the giver of life, and by thy constant presence in our lives Thou dost defend and preserve our lives. We desire to recognize our dependence upon Thee. We would believe, Our Father, that in Thee we do live and move and have our being, that Thou art intimate with all our thought and our life. We believe, O God, that Thou art the God of light and not darkness, that Thou art ever on the side of that which is good and true and helpful; that whenever men have been blind and superstitious and have misunderstood Thee, they have been identified with that age of darkness and wrong and the evil of pain. Thy Kingdom is a kingdom of truth, and Thou hast sent Thy Son into the world that He may proclaim the acceptable year of the Lord and that He may announce to us that this age shall, O Father, be one of recovery of sight to the blind and healing to the sick and release of all who are captive to their sins or to evil of any kind. We thank Thee, O Father, that all men, wherever born, may co-operate with Thee, are indeed to be Thy laborers and Thy servants. We ask Thee that Thy servants may feel the greatness and the grandeur of their work and their life, and that it may be theirs to believe that they are co-operating with the Eternal Father; that, therefore, they may stand reverently in their places and do their work with a sense of its greatness before them. We thank Thee, O Father, for every way in which Thou art causing Thy truth to shine upon us, for every manifestation of life which Thou art bringing to light. May we desire to know all of Thee that Thou art pleased to teach us with reference to any part of our life. May we live in harmony with Thy laws as they are written, and may our outward and our inner life be subject to the Law of God and the Father. May we live reverently before Thee and seek to obey Thy laws. So, Our Father, we pray Thee

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that it may be the advantage of life that we are all, in our separate ways and works, able to work with Him who in working for us in seeking to bring to fulfillment the Divine Kingdom and the Divine Law. Amen.

Dr. D. C. Hawley, Secretary, read his report.

The Treasurer, Dr. D. G. Kemp, presented his report, showing a balance of $332.87 in the treasury.

The following resolution was introduced by Dr. A. P. Grinnell, and passed after being thoroughly discussed :

Resolved, That at this time and hereafter, at the annual meeting, the Treasurer arrange for a banquet to take place in the evening of the first day, after the President's address, to be paid for out of the treasury.

The resolution was passed.

Dr. J. B. Wheeler made a few remarks on Intubation of the Larynx. He said, "Two years ago, I think it was, I reported a case of intubation of the larynx, which was my first case, and terminated in rather a peculiar way. Since then I have had some larger experience, and I thought that perhaps you might be interested to know the results and the manner in which, here in Burlington at least, it seems to compare with tracheotomy. I have done the operation in all fifteen times, and of those fifteen times there have been five recoveries. That is a recovery rate a little ahead of the general average of published statistics, though if I had made the report a month ago it would have been somewhat behind the general average rate, for when I had performed it upon thirteen cases there had only been three recoveries. But the point I wanted to make was, that if there was any inference to be drawn from so small a number of cases, it is that the operation in private practice offers a better chance of recovery than tracheotomy. I do not know that any case of tracheotomy was ever done here in Burlington in which recovery ensued. Dr. Bingham told me of one case in which the patient lived nine days. It was a case of diphtheria, which died of diphtheritic poison. That is the longest life I have known of about here after the operation of tracheotomy. Of these fifteen cases of intubation, I think I may safely say that life was undoubtedly saved in each of the five cases that recovered. The children were all very sick, breathed in a very labored way, were a good deal cyanosed, and had all the symptoms of speedy suffocation ; in fact, the same conditions in which you would perform tracheotomy. The published statistics, taken in hospitals, etc., of tracheotomy and intubation, compare pretty evenly with each other. The recovery rate is not very different, somewhere from 28 to 30 per cent., but there is a great difference in the mortality rate of tracheotomy, in the hospital where the patient can receive the most careful and skillful after-treatment, and in private practice where the patient frequently receives little or no care. Perhaps another reason for its saving fewer lives than the operation of intubation, is that

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parents naturally object more to an operation which requires cutting than to one which merely involves slipping a tube into the larynx through the mouth. Whatever the reasons may be, I merely wish to lay before you these two facts, that in the series of fifteen cases, which were all of them cases in which suffocation was imminent, I have had five recoveries, while of all the tracheotomies which have ever been done here, (I do not know how many that is), there has never, so far as I know, been a single recovery.

Dr. Grinnell. I would like to ask the doctor if several of the cases that died would have lived if they had received proper treatment?

Dr. Wheeler. The advantage which is claimed for intubation is, that it does not require such careful after-treatment. We do not have to have a trained nurse constantly to look after the patient. Of course care of that sort will save patients in intubation as well as in tracheotomy, but more cases of intubation will recover under unskilled treatment than cases of tracheotomy.

Dr. Bullard. May I ask, Dr. Wheeler, if you have had any cases where you could not get the tube through?

Dr. Wheeler. I have had some cases in which there was difficulty in inserting it, owing partly to the struggles of the child. An improved form of gag would have corrected that. I never found any great amount of difficulty in inserting the tube. Sometimes I would have to withdraw it two or three times, but finally it would slip in without any great amount of trouble. There is a moment's choking while it is going in. I used the ordinary O'Dwyer's tube. If I had expected to make these remarks I would have brought the instruments with me. The youngest case that I ever had was about two years old. There is more difficulty in withdrawing the tube than in introducing it; that would be very clearly shown if I had a tube here. As it is withdrawn another instrument, an extractor, is put on and inserted into the mouth of the tube, so as to hold the tube in that way. The greater difficulty in withdrawing it is owing to the fact that the opening in the tube is smaller than the opening in the larynx. It is not an operation which offers any special difficulty to any one who is accustomed, for instance, to the use of the laryngoscopic mirror.

Dr. S. H. Griswold, of Rutland, read an obituary of Dr. H. F. Crain.

Reading of "Seven Years' Obstetrical Record," by Dr. F. R. Stoddard.

Adjourned until 2 o'clock P. M.

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AFTERNOON SESSION.

Called to order by President Clark at 2 P. M.

The following gentlemen were named by the Chair, to serve on the nominating committee: A. P. Grinnell, S. S. Clark, S. L. Wiswell, D. G. Kemp, E. S. Albee.

Dr. Charles D. Drake, of West Lebanon, N. H., presented his credentials as delegate from the New Hampshire Medical Society.

He was introduced by the President and responded briefly.

Dr. G. B. Bullard called on Dr. Walter Carpenter for a few remarks.

Dr. Carpenter responded by saying that he came in as a spectator, and asked to be only a listener.

Dr. P. P. White's paper on "The Treatment of Typhoid Fever," was read by the Secretary.

Dr. C. S. Caverly, on behalf of the Rutland County Medical Society, invited the Vermont State Medical Society to hold its next semi-annual meeting in Rutland.

Adjourned to 8 P. M.

EVENING SESSION.

The Society was called to order at 8.20 P. M., by the Vice President Dr. F. W. Goodall.

The President, Dr. J. M. Clarke, presented his annual address, entitled "Brief History and Future Work of the Society."

In keeping with a suggestion therein presented, Dr. D. G. Kemp offered the following in amendment to the Constitution:

Resolved, That the following words in Art. III of the Constitution be stricken out, "and a semi-annual meeting at such place as the Society shall direct, on the last Thursday and Friday in June," (thereby amending the Constitution and discontinuing the semi-annual meeting.)

The subject of bogus-diplomas was discussed at considerable length.

Adjourned to 9 A. M., Oct. 11.

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SECOND DAY, FRIDAY, OCTOBER 11, 1889.

Society called to order at 9 A. M., by the President.

The nominating committee presented the following list of officers for the ensuing year :—

President,	H. S. Brown	St. Johnsbury.
Vice President,	J. B. Wheeler	Burlington.
Secretary,	D. C. Hawley	Burlington.
Treasurer,	D. G. Kemp	Montpelier.
Auditor,	C. E. Chandler	Montpelier.

EXECUTIVE COMMITTEE.

H. S. Brown, C. S. Caverly, D. C. Hawley.

LICENSE CENSORS.

H. D. Holton, J. H. Jackson, H. R. Wilder.

PUBLICATION COMMITTEE.

J. M. Clarke, J. H. Woodward, J. B. Wheeler.

COUNCILLORS.

W. H. Vincent	Addison	County.
Lyman Rogers	Bennington	"
S. T. Brooks	Caledonia	"
H. C. Tinkham	Chittenden	"
R. T. Johnson	Essex	"
Ralph Sherwood	Franklin	"
F. L. LaDue	Grand Isle	"
E. J. Hall	Lamoille	"
H. H. Lee	Orange	"
C. F. Branch	Orleans	"
C. W. Peck	Rutland	"
H. O. Worthen	Washington	"
E. S. Albee	Windham	"
Henry Boynton	Windsor	"

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DELEGATES.

American Medical Association.—Secretary to give credentials to any members who will attend.

Maine.—C. F. Branch, H. H. Lee.

New Hampshire.—D. F. Rugg, E. R. Campbell.

Rhode Island.—W. H. Vincent, P. P. White.

Connecticut.—A. B. Bisbee, C. S. Pratt.

Massachusetts.—D. G. Kemp, S. S. Clarke.

New York State Medical Society.—C. W. Petty, F. L. LaDue.

New York State Medical Association.—Geo. Densmore, A. P. Grinnell.

Northern New York Medical Association.—W. R. Prime, J. H. Hamilton.

Connecticut River Valley Medical Association.—S. T. Brooks, C. F. Camp.

White River Valley Medical Society.—C. N. Hunt, A. V. Goss.

Medical Department U. V. M.—C. F. Branch, S. S. Clarke.

Dartmouth College.—Senior Delegate, A. C. Bailey: Junior Delegate, F. L. Kidder.

The report was accepted, and the Secretary instructed to cast the ballot of the Society for the officers as named.

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PRESIDENT'S ADDRESS.

DR. J. M. CLARKE, BURLINGTON, VT.

Fellows of the Vermont State Medical Society:—

Our Society is seventy-five years old. Seventy-five years is a long time and means a great deal. It means two ordinary generations of men. It means the uprising or the fall of nations. It is time enough for wars and the renewal of wars, and a complete revolution of the destiny of a country. Verily, three-fourths of a century is a long time, and through it all, the Vermont Medical Society survives.

It is well from time to time to take a retrospective view of any continual undertaking. It is found profitable in all forms of mercantile business at certain times, to take an inventory of stock and consider the bills payable and receivable, and thus learn how the business pays. Institutions of learning have their regular examinations, to find out the progress made during the Past up to that time. Societies have their centennials, and all bodies of men, whatever their object, at times consider their past work. I thought it would be both profitable and interesting to present some of the early history of the Society at this meeting, and consider our progress.

I have taken extracts from "Thompson's Vermont," being the only record of early Medical Societies in existence, so far as I am able to find.

The first incorporated Medical Society in Vermont, was organized on the 19th of August, 1784, and consisted of most of the physicians residing in the counties of Bennington and Rutland. The act of incorporation was dated October 25, 1784, and its corporate name, "The First Medical Society in Vermont." The next Medical Society was formed in Windham County, in 1794, and incorporated on the 21st of October of that year, by the name of "The Second Medical Society in Vermont." On the 6th of February, 1804, another Society was incorporated in the County of Franklin, denominated, "The Third Medical Society in Vermont," and on the 27th of October, 1812, a County Medical Society was incorporated in the County of Windsor; but no State Society was formed till the year 1813.

On the 6th of November of this year, an act was passed, declared, in its preamble, to be for "the improvement of the theory and practice of the different branches of the healing art." This act authorized the physicians in the several Counties to form themselves into County Societies, conferring upon them, when thus formed, corporate powers. It also established a general Society, to be composed of three members

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from each County Society to be chosen by ballot, and declared these when duly organized by the choice of a president and other officers, to be a corporate body, by the name of "Vermont Medical Society."

Under the provisions of this act, which subsequently experienced some modifications, several County Societies and a State Society were organized. These Societies were sustained, for several years, with considerable spirit and ability, and exerted a favorable influence throughout the State, in correcting the evils and elevating the practice and standard of the medical profession. But at length the attention of many of the leading physicians in the State was diverted from the interests of the Medical Societies to the establishment of schools for medical lectures, in consequence of which, the Societies languished; and, for several years previous to 1841, the State Medical Society hardly had a name to live.

The first regular meeting of the State Society was held in Montpelier, Vt., July 7, 1814. This date, you will notice, is at the time of our present semi-annual meeting. The act of the Legislature incorporating the State Medical Society was passed in October, 1813.

I have copied the records of this first meeting, as I considered it of enough interest, especially to the younger members, to warrant doing so.

RECORDS OF FIRST MEETING.

MONTPELIER, July 7, 1814.

In conformity to an act of the Legislature of Vermont, passed in October, 1813, incorporating a State Medical Society, by the name of the Vermont Medical Society, and agreeably to notice given by Dr. John Pomeroy, of Burlington, the following gentlemen assembled at Montpelier on this day for the purpose of organizing said Society, viz.: Doctors Selah Gridly, Ezekiel Porter, John Periga, Luther E. Hall, Benj. Chandler, Erastus Torry, Stephen Peirce, Edward Lamb, Abel Ellsworth, Elijah Littlefield, Wm. B. Marsh, Calvin Deming, Frederick Ford, Jr., Melvin Barnes and John Pomeroy.

Dr. S. Gridly was chosen President, P. T.: Dr. J. Pomeroy, Secretary, pro tem.; and Dr. B. Chandler, Assistant Secretary, pro tem.

The President then proceeded to call on the delegates from the different County Societies for their credentials, when the following were exhibited, viz.:—

From the County of Rutland—Drs. Porter and Gridly.

From the County of Bennington—Dr. Ellsworth.

From the County of Windham—Elijah Littlefield.

From the County of Addison—Drs. Hall and Ford.

From the County of Windsor—Dr. Erastus Torry.

From the County of Jefferson, (now Washington)—Drs. Lamb, Peirce and Deming.

From the County of Grand Isle—Dr. Barnes.

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From the County of Franklin—Dr. Chandler.

From the County of Chittenden—Drs. Pomeroy, Periga and Marsh. Which were read, and on motion were accepted.

Dr. Selah Gridly and Dr. Pomeroy were elected a committee to prepare a code of by-laws for the government of the Society.

When, on motion, the Society adjourned to 9 o'clock, A. M., to-morrow.

July 8th, 9 o'clock, A. M.

Society met agreeable to adjournment, and the journal of yesterday was read.

Drs. Porter, Chandler, Lamb, Hall and Periga were appointed a committee to report a course of education necessary to be pursued by medical students before they can be entitled to a diploma.

On motion, the Society dissolved to the election of its officers, at 5 o'clock, P. M., of this day.

Drs. Ford and Deming were appointed a committee on the subject of diplomas.

The Society then adjourned to 8 o'clock, P. M.

8th, 8 o'clock, P. M. Society met according to adjournment.

The committee on the subject of medical education presented their report, which was accepted.

The committee on the subject of diplomas reported that in their opinion the specimen exhibited by Dr. Gridly is appropriate and well executed and ought to be adopted by this Society.

REPORT.

Dr. Cyrus Washburn of Vermont, in the County of Windham, pre sented his credentials and was accepted.

The Society now proceeded to the choice of officers, when

Dr. E. Porter was elected..... ....President.
L. E. Hall, " .....Vice President.
E. Deming, " ....Secretary.
Wm. B. Marsh, " ....Treasurer.

Censors,—Drs. E. Lamb, S. Periga, B. Chandler, M. Barnes, E. Littlefield, E. Torry, I. Ford, ——Stone, E. Washborn.

S. Gridly. ....Corresponding Secretary.

When the Society adjourned to 8 o'clock this evening.

JOHN POMEROY, *Secretary, P. T.*

8 o'clock, P. M., meeting opened agreeable to adjournment.

On motion, voted that Dr. Barnes be added to the by-laws' committee.

Meeting adjourned to to-morrow, 8 o'clock, P. M., at this place.

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SATURDAY, 9th, 8 o'clock, P. M.

The Society met agreeable to adjournment.

Voted that Drs. Pomeroy, Chandler and Gridly be a committee to make a selection of books on medicine and the collateral sciences required to be used to complete a medical education.

Voted that the sum of two dollars be paid by each County Society at the next meeting of this Society.

The following articles were then presented by the committee on that subject, and adopted as the by-laws of the Society, viz.:

Whereas, the Vermont Medical Society has been duly organized, under the authority of a statute for that purpose, November 13th, 1818, and whereas, by the said statute this Society has a right to make by-laws for its own regulation, and also for the regulation of the several County Societies mentioned in said statute, therefore be it ordered:

1st. That whenever a quorum shall be assembled according to the act aforesaid, the President or presiding officer may declare the Society constituted, and may call on the Secretary and the several members to perform their duty.

2nd. At the opening of each meeting the record of the preceding meeting should be read by the Secretary.

3rd. When any member shall speak in the Society, he shall arise and address himself to the President.

4th. The President shall determine the questions of order unless overruled by a majority of the Society.

5th. The President shall nominate all committees unless otherwise directed by the society.

6th. The President shall have a casting vote in the decision of all questions, and in the absence of the President, the Vice President, or the President who may be elected *pro tempore*, shall exercise the same power.

7th. The President shall have the power to call a special meeting of the Society, on receiving a written application for the same from the members of said Society, by publishing in any newspaper or newspapers circulating throughout the State, at least six weeks previous to the proposed meeting.

8th. The President shall at the annual meeting, closing each year after his election, deliver to the Society an appropriate address, or produce one to be read by the Vice President or Secretary, or pay into the treasury the sum of 25 dollars.

9th. The Treasurer shall be accountable for all money placed in his hands by the Society, and shall pay it over to the order of the Society, signed either by the Vice President or Secretary, and shall also exhibit annually a written statement of the funds.

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10th. The number of censors to be annually chosen, shall be nine, two of whom shall have power to examine candidates.

11th. The candidate to be examined shall, previous to his examination, be required to exhibit satisfactory testimonials, that he has studied the various branches of the healing art on which he wishes to be examined, for the term of three years, with some licensed practitioner, that he has a fair moral character, and has not been refused a diploma at one of the County Societies.

12th. Each candidate, previous to his examination before any of the County Societies, shall be required to present to the Society a written dissertation on some subject relative to his profession, and when approved by the Society and presented with a diploma, shall be required to pay to the Secretary of said Society the sum of five dollars.

13th. It shall be the duty of the Secretary to keep an account of all money received according to the foregoing section, and as often as may be convenient, shall pay over the same to the Treasurer of said Society.

14th. Whenever the Censors shall recommend a candidate who has been examined for that purpose, and the Society, by vote, shall approve of the same, it shall be the duty of the President and Secretary to make out, sign and affix the seal of the Society to a diploma in a form to be hereafter agreed upon by the Society.

15th. It shall be the duty of the Secretary of this Society to furnish copies of these by-laws, together with the proceedings of this Society to each County Society, on their making application therefor.

16th. The County Societies shall, after being duly approved of this law, send by their delegate at each annual meeting of this Society, a copy of their by-laws and every addition to, or alteration of the same, and the Secretary of this Society shall file and preserve the same in his office.

17th. This Society and every County Society shall avoid interposing any authority or advice relative to the particular charges of individual members in said Society.

18th. Whenever a candidate shall appeal from any County Society he may be examined, approved and receive a diploma from this Society according to the regulations prescribed in the foregoing articles, and according to the 12th article, and on the receipt of the diploma, the said candidate shall pay to the Secretary the sum of 10 dollars.

19th. No member shall leave the room at the time the Society is in session, without permission from the President.

20th. No alterations shall be made in the by-laws of this Society except at an annual meeting, and with the consent of two-thirds of the members present at said meeting.

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21st. It is hereby further ordained, that in future, the meeting of this Society shall be on the same day and place as the Hon. Legislature commences to hold their annual session.

On motion, voted that Dr. Porter (President), Dr. Gridly and Dr. Pomeroy be a committee to devise and procure a suitable seal for the Society.

Resolved, That it be recommended to the several County Societies to procure blank diplomas from the plate procured for the use of the Medical Society in Rutland County, for their use on the admission of members, and also that each County Society procure a seal for their own use, on which the name of the County in which it is to be used shall be engraved, as Windham County Society, &c., &c.

These by-laws have been amended and reconstructed twice, the last time in 1887.

The next meeting was held in October, 1814.

So far as I can learn no records exist of the meetings between 1814 and 1851. If any member has knowledge of any records of the proceedings during these years, I hope he will place them with the Secretary.

From 1851, the reports are continuous, and show very creditable work by the Society.

Dr. Porter was the first President of the Society, according to the records.

Since 1851, representing 37 years, we have had 34 Presidents. Dr. E. D. Warner, of New Haven, had the chair two years, and Dr. L. C. Butler had the chair four years. Of these 34, fourteen or fifteen survive.

The Society has now, and has always had, good men, and true to the profession.

The work of the Society has resulted in great good to its members and to the public throughout the State.

The State Board of Health, after years of persistent work, is at last a reality, and is regularly attending to its duties.

Education, both general and professional, is a constant theme for consideration, and its importance induces me to mention it here. We are all interested in this matter, and like stockholders in a co-operation, are all directors, and our aim should be to raise the standard of common education, especially in those who contemplate entering the profession.

Medical government is a subject that should occupy the thoughts of the members of the Society sufficiently to carry out some form of legislation that will effectively purge the country and relieve the public from quackery, that now openly walks the streets of our State, seeking whom it may destroy.

The present law upon our statute book is a farce, and amounts to nothing. To illustrate :—

A man (whom most of you have heard of), came to Burlington and in the usual spread-eagle fashion, advertised himself at the hotel, put

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out his cards, and daily sent out printed sheets with his beaming countenance on the outside, promising cure to all who came. These were handed to travellers by boys on the street corners, thrown into carriages, etc. This manner of getting himself before the public attracted crowds of the kind who patronize these fellows.

He did a tremendous business, taking in the money as well as the people.

Well, it occurred to me that it would be well to investigate this individual's legal right to go on in this wholesale way, in defiance of law and justice.

I inquired into the law points a little, and came to the conclusion that the whole matter hung on a license to practice medicine. I thought of course he had nothing of the kind. I corresponded with one of the censors of the Society, who left it altogether with me to work out, and suggested prosecution at once. While this was in accord with my feelings, I "made haste slowly," and finally concluded to learn if possible, for a certainty, if he had a license.

I consulted with a legal friend, who became interested at once in the subject, and volunteered to go and interview the great man.

He proceeded to the consulting-room (excuse the expression), and, after awaiting his turn, asked the man what right he had to claim to practice medicine, and if he had a license.

He replied that it was none of his business, and further inquired who he was that made bold to come and ask such questions.

He was informed as to these points, and he then terminated the interview by refusing to say whether he had a license or not.

Well, in order to prosecute our plans, I immediately sent letters of inquiry to each County Clerk in the State, to learn if a certificate given such a man, was recorded in their records.

The replies began to come in as I expected in the negative, until, to my utter astonishment, the last one informed us that this man's license was duly recorded.

I immediately sent for a certified copy of the certificate, and in due time received it. (Read certificate.)

So this is the working of the present law.

Any chartered Medical Society can give a license, even if the Society giving the license is a body of men unfit for the name.

To my mind, the present law should be completely removed, and a properly framed statute take its place, requiring an Examining Board to be appointed, who shall grant license to practice Medicine and Surgery when satisfied of the applicant's ability to do so. Together with this, I would add that such license shall be visible to the public in some place. I would go still further, and make a fine of a good round sum,.

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part to go to the complainant, for each offence of giving advice or prescribing for a sick person as a doctor, whether pay was received or not.

I will not undertake to formulate a bill here, but some law of this kind is an imperative demand to protect the public against swindlers, and to protect our own rights.

I earnestly hope some action upon this subject will be taken, to the effect that a committee be appointed to draft such a law and report at the next regular meeting, that it may go into the next session of the Legislature, and, if possible, become a law.

This is a subject that every physician of good standing in the State should feel an interest in, and be willing and anxious to use his influence to help it through. A good deal can be done by each one of us attending to the matter, and, in an interview with the member from our respective town, convince him of the absolute need of this law for the public good.

The medical laws of the State properly belong to the medical profession. The progress of medical science requires that new enactments should be made from time to time; and regulating the practice of med icine is one of great importance, and it is our duty to see that it is done.

Many other States are moving in this matter and have good license laws on their statute books.

I have occupied considerable of your valuable time on this topic, as I consider it one of the most important questions that you can consider, and, if carried out, will make an epoch in the history of the Society which you may be proud of.

In 1884 the number of regular physicians in the State was 418; belonging to the Society, 214, or little more than one-half.

Here we are with a working force of 214 members in 1884 and many additions since, but most of our meetings are made up of from 20 to 40 being present.

The programmes are never fully carried out, and it is with difficulty the Secretary can induce enough members to fill it.

Why does this condition of affairs exist? Why is there so little interest manifested? Who can explain? We are not doing the work we should; we do not try to attend the meetings, and when we do go it seems to be the object of many to see how soon they can return home.

These are not imaginary things; neither are they offered as complaints, but as facts which we all too well know. This is not right, and it is a great waste of time and material to go on in this manner from year to year.

I wish to offer a few suggestions which I have well considered, and consulted with some of the members in relation to them.

One is, to so amend the by-laws as to omit and do away with the present semi-annual meeting. The reason for this is obvious. All other

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prosperous State Societies have only annual meetings. Our Society cannot afford to attend two meetings each year. The semi-annual is a failure as far as profit to the members is concerned. It will be very much better to concentrate our forces in one good, well attended, interesting meeting.

It has also been suggested that the time for the annual meetings be changed to summer instead of autumn. On the other hand, October is the month of representatives, and induces many to go who otherwise would not do so. But it is a question in my mind if the meeting of the Legislature at the same time of the Society is of any advantage to our Society. It diverts from the interest of the meetings, and the crowd is a disadvantage. The meetings should be of two full days in length.

Members should go the night preceding the first day, and be present at the opening, the following morning, and go home the morning following the second day.

A stenographic reporter should be in attendance through the whole meeting, and his report printed and put on file among the archives of the Society, and these kept in a fire proof safe.

The Society should have a place or headquarters for the deposit of the records and books, etc., that they may be preserved and be accessible to those who may need them in the future.

I sincerely trust that some action will be taken at the present meeting to carry out these plans.

The Society has plenty of good material to make it pleasant and profitable.

The younger members who are being taken into the ranks, should be ready, and consider it an honor to present papers before the meetings.

Written productions are the only ones that will prove satisfactory and instructive. Some can talk well, *very well*, and acquit themselves in speech before an audience. But a studied preparation of a subject put on paper, is double the value to the listener. Again, written productions are printed in the proceedings, and those members who were unable to attend the meeting can read at home. Therefore, when you are on the programme for the next meeting, see to it that you prepare in writing what you want to say, and attend the meeting and read it.

The social part of our meetings should not be overlooked, as it is a strong binding element in the construction of a successful Society. Perhaps some new departure in the way of attraction to the absent members could be instituted. As, for instance, a grand dinner the evening of the second day, at which all members should be entitled to sit.

I hope something may be done towards the awakening of new interest in this way. Finally, brethren, let us join hands, and give all together, a long pull and a strong pull, and place the Vermont State Society where it belongs, on equal standing with Societies of our sister States.

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SEVEN YEARS OBSTETRICAL RECORD.

By Dr. F. R. Stoddard, Shelburne, Vt.

This record is for the past seven years, in a small country town, and is a report of two hundred cases of confinement. Of this number, only five presentations occurred. Of these, 124 were L. O. A., 69 R. O. A., 6 breech, 2 brow, and 1 knee. Of these, 165 occurred in multiparous women, 35 in primiparous women. Of these, 113 were girls and 87 boys. The largest girl weighed 13 pounds, the smallest 2 pounds. The average weight was 8 pounds. The largest boy weighed 14 pounds; the smallest 4 pounds; the average weight was 9 pounds.

In these two hundred cases, twins occurred but once, both boys, weighing 10½ and 7½ pounds, with a single placenta. Forceps were used in only twenty cases. Of these two hundred cases, ten were still-born. Only one death of the mother has occurred, which resulted from heart clot. The woman had a very hard labor. She was in labor for 24 hours, and was at last delivered with forceps, after being thoroughly etherized; Dr. Geo. Briggs assisting me. No great amount of blood was lost, and the woman did well for the first 24 hours, and then she developed phlegmasia dolens. She had had the disease at the last confinement, which occurred four years previous. She was very restless, and while the nurse was out of the room a moment, tried to get up, and fell back dead. No post mortem.

Placenta previa occurred only once, hemorrhage occurring at 6, 7 and 8 months, and was controlled by opium and rest. The diagnosis was confirmed by council. When labor occurred, I was sent for at once, and when I arrived, the os was fully dilated, the head presenting, and no hemorrhage, and labor concluded early.

Convulsions have occurred but once, that was 20 hours after confinement. In this case, the child was still-born, and the placenta was somewhat decomposed. The labor was normal. Labor was finished at 9 P. M., and the woman was somewhat nervous and in some pain, and I gave her ⅙ gr. morphia hypodermically, at 7 A. M. She was very comfortable until 3 P. M., when the first convulsion occurred. I got there at 4.30 P. M. She had had four convulsions, and had two after I got there. While I was sending to my office for some ether, I gave xx gr. bromide potassium every half hour. When I got the ether, I thoroughly etherized her and kept her so for two hours, then ether was discontinued, but the bromide continued, and the woman made a good recovery.

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Post-partum hemorrhage has occurred but twice. Once in a primipara, and the other multipara. These cases were controlled with ice and ergot.

The cord has been about the neck in 30 of these cases. I make a practice as soon as the head is born, to pass the finger about the neck, to see if all is right, and if the cord is about the neck, I draw it down and slip it over the head.

Hour-glass contractions of the uterus has occurred but once, and that after giving a dose of ergot gtt. 60. Since then I do not give ergot until after the placenta is born, unless there is flooding; then I give the ergot and remove the placenta at once. In this case, I etherized the woman, and introduced my hand into the vagina, and used the finger to dilate the contraction, and as soon as could, removed placenta.

Adherent placenta has been found in 20 cases, or ten per cent. If I cannot readily remove the placenta by pressure on the uterus, and slight traction on cord, after twenty minutes I give ether and introduce my hand into the uterus, and carefully peal off the placenta. I never consider the patient safe until the placenta is delivered, and examined, to see if it is all removed. After the removal of an adherent placenta, the vagina should be washed out with a solution of 1—2000 bichloride.

Puerperal fever has not occurred except in one case, and then very lightly. In that case I was sent for by the husband. He said he wished I would hurry as his wife was alone, and he had to go two miles for a nurse. When I got there, the child was born and the woman sat on the edge of the bed in a pool of blood. The placenta was not delivered, and there was no hot water in the house, and so without any disinfectant, I went after the placenta, as the woman was bleeding fearfully. I soon delivered the placenta, and applied a band. On the third day, the woman had a chill, and some rise of temperature, but it all passed off with the use of vaginal douche and quinine.

In all cases of abortion in second and third months, I have had more trouble with the placenta than in any other cases, but I always dilate the os clean out the womb thoroughly, and wash out the vagina with a solution of Bi-chloride 1—2000.

I have never had a rupture of the perineum that needed to be stitched. There have been several small rents, but by putting on a tight band and keeping the hips well together, they have all healed by first intention.

I have attended confinement cases while I was attending diphtheria and erysipelas, and have never carried the disease, but make it a point to keep my hands as near aseptic as possible, and then go ahead and do the work.

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In these two hundred cases, no deformities have occurred, with one exception,—a male child,—who had spina bifida. When born, the child had a tumor in the lumbar region the size of an English walnut. The tumor began to grow soon, and got to be as large as a quart bowl when it suddenly ruptured, and the child soon died. He never had any use of his legs.

THE TREATMENT OF TYPHOID FEVER.

DR. P. P. WHITE, WILLIAMSTOWN, VT.

Gentlemen :—

Before taking up the treatment of typhoid fever, let us consider the pathology for a moment.

Typhoid fever is caused by the ingestion of a certain poison into the system, which, when it comes in contact with Peyer's patches, causes these glands to become inflamed, and gives us those symptoms by which we diagnosticate this disease. Could the glands be exposed to view during a run of fever, we should see as the glands began to inflame, that the fever also began to appear, and increased according to the number of glands involved and their extent of inflammation. Undoubtedly many of these glands end in resolution at the end of the first or second stage, while others go on to the third stage and slough.

The indications for treatment in the early part, or the first week of the disease, is to abort it, or make it as light as possible.

In speaking of abortive treatment, I doubt very much whether the number of abortive cases can be increased. However, I do think that cases can be made much milder if properly managed from the beginning.

It is a great mistake for persons to keep around when typhoid fever is suspected. They should take the bed as soon as the disease is suspected, and keep perfectly at rest from bodily fatigue and mental strain. When a cathartic is indicated (early part), calomel, with proper precautions, may be given with the hope of getting the abortive effect. It is always well to give a laxative to clear out the intestines, to be certain that the passage is free of all irritating substances which might increase the congestion of the glands.

Castor oil is said to have as good effect as calomel.

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If the action of the heart seems forcible, skin dry, with more or less pain, give tr. aconite in drop doses every ½ hour until the action is diminished; this will assist in diminishing the inflammatory action.

The sick room should be large and easily ventilated; it is hardly possible for a patient to take cold when the fever is on, even though a draught strikes him.

It is convenient to have an extra bed in the room, so that the patient can be lifted from one to the other when occasion requires. The patient should avoid all exertion. Hypnotics and anodynes should be resorted to when necessary.

Allow no company in the sick room; it is one of the most annoying things I have to contend with in country practice.

Cleanliness and order must prevail, and strictly prophylactic measures carried out.

Quin. sulph. should be given in two grain doses every four hours, during the disease, as tonic and antiseptic. A mouth wash, composed of listerine, glycerine and water, equal parts, may be freely used.

Alimentation plays a very important part in the treatment of Typhoid fever. The nourishment should be liquid; milk stands at the head; from two to four pints should be supplied each 24 hours; at divided intervals, lime water should be added if curdled milk is rejected from the stomach, or if it appears undigested in the evacuations.

No solid food can be given with safety until after the fever has subsided.

The fever may be reduced by a number of methods. I prefer the sponge bath when it can be given properly. Place the patient on a flannel blanket, expose only the part being sponged at a time. Leave the body moist. Do not wipe, the heat of the body will dry the moisture very rapidly. Continue the bathing until patient complains of being chilly, or until the temperature falls to a certain point which you may designate to the nurse. Repeat the bathing whenever the fever exceeds 102, (for example).

The temperature of the water should be governed by the (1) stage; (2) height of fever; and (3) constitution of patient. Should I wish to reduce temperature by internal antipyretics, antifebrin would be my first choice.

The German physicians speak in high praise of the actual baths, as a means of reducing temperature in typhoid fever. They seem to meet with excellent success, and show a very small per cent. of deaths. It is not practical in country practice.

In excessive meteorism, use turpentine stupes, and sub. nit. bis., internally.

When the diarrhœa calls for treatment, (when more than five operations in twenty-four hours,) give bismuth sub. nit.

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Constipation can be relieved by glycerine supositories, or by an enema of olive oil, followed in the course of fifteen or twenty minutes by injection of soap suds.

Where a good quantity of milk is being consumed, the bowels should move every other day at least In hemorrhage of the bowels, apply ice-cold applications to abdomen ; give hypodermic injections of ergot. For heart failure try strong coffee.

When convalesence begins, the patient may be allowed a little porter or some other stimulant, until the strength is regained.

There is no routine treatment for this disease. The first week should be devoted to putting the patient in a favorable condition for the contest, by getting rid of the poison, or destroying it, opening up the pores of the skin, clearing out the bowels ; using sedatives to moderate an excessively rapid pulse. After the first week, more particularly, strict attention should be paid to the nourishment, as the system can resist the ravages of such a disease if properly nourished, better than it could were it not.

Always be on your guard for complications. Remembering it is better to prevent them, but well to cure them.

Dr. Clarke. The paper is now before the Society for discussion. I should like to hear from any member who has remarks to offer.

Dr. Bullard. Typhoid fever is a matter of such vital consequence in Vermont that it seems as though it would be a proper time for us to discuss this exceedingly proper subject.

I certainly, for myself, would rather hear my Vermont neighbors who have the same environments that I have to deal with, discuss this subject of typhoid fever, than hear it discussed by parties in Tennessee. I can hardly sit still and see a matter of so much consequence to my interests, with a case that is harrassing me to death this day, pass by without some notice. To me everything has become new in typhoid fever within a very few years. For instance, what I will do with antipyrine, or what I will do with antifebrine, or what I will do with calomel, or what I will do with quinia. I must say that having praticed medicine thirty-five years, I am more mixed on typhoid fever than I was twenty or twenty-five years ago. Now, as to antipyrine and antifebrine, I want to ask, and I want my neighbors in Vermont to tell me, what their experience is with antipyrine and antifebrine in typhoid fever ; whether they believe that they get any benefit—whether mortality is any less. I wish they would tell me how much benefit they have gained from practicing the antiseptic practices so much laid down at the present time. Now, I rise, Mr. President, to ask this question because I know there are lots of doctors here, and I wish them to tell me something about their experience. I

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wish to say that I believe every dose of antipyrine and antifebrine I have ever given has done my patient harm, and still I have used it faithfully and discreetly. I believe that they are dangerous remedies. and if there is any gentleman here who thinks they are safe, nice remedies to use, I wish he would tell me how he uses them and what the results of his treatment are. I do not want this question of so much importance to pass by undiscussed. If Dr. Grinnell is in the house I would like to hear from him.

Dr. Clarke. Dr. Grinnell is not here.

Dr. Branch. I would like to hear from Dr. Woodward.

Dr. Woodward. In the first place I wish to say that I am not a general practitioner of medicine, therefore I have no experience to give on this subject—that is, no recent experience, but it is my business to keep watch of the various matters that are brought up, and of the various medical teachings, not only pathological but therapeutical, and I think I can say from my study of literature for the past year that there is no doubt that it is the opinion of the profession that antipyrine and antifebrine are injurious There is no question at all that both remedies are decidedly weakening to the action of the heart. Moreover, the antipyretic effect of these remedies is transitory. The temperature soon rises again and attains the same high point which it had reached before. This is the way in which the matter is laid before me in the medical journals, both as a result of experiments upon animals and as a medical experience in hospitals, where the temperature record is more thoroughly kept than it can be in private practice. Finally, it has been shown you, no doubt, that antipyrine and antifebrine do not shorten the course of typhoid fever. It runs the same number of weeks when you give antipyrine or antifebrine. But there is a therapeutic measure for the reduction of temperature in typhoid fever which is based upon the largest collection of statistics I know of, and that is the statistics collected by Brand. For the effect of cold water baths upon the temperature, in typhoid fever, Brand and his confreres have shown, if statistics can prove anything at all, that the cold water bath is by far the best treatment for this disease. They have reduced the mortality, which in German hospitals and in the German army was above 20 per cent, down below 10 per cent. Brand is so enthusiastic that he affirms that the disease can be carried through with almost no mortality at all. In fact, he reports nearly one thousand consecutive cases without death.

Dr. Carpenter. I excused myself from speaking, but these remarks have brought to my mind many of those cases which I have had in my life. They more especially called to my mind the theory and practice of the late Nathan Smith, a man who had an original theory. He was an original practitioner, and he first established this same theory that has been held by Dr. Woodward,—the cold water treatment. Typhoid fever

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went under the name then of typhus fever. Fevers that were of low type were considered to be of this character, without knowing anything of the specific character of the disease An epidemic broke out in the town of Cornish, N. H. Statistics showed that about 80 per cent. of those who were taken sick with typhoid fever died Nathan Smith was then at Huntington and was called in consultation. He followed the disease, as you will find in his work—although many of you probably have never seen it, for it is about obsolete by this time—up the Connecticut river to Canada, following down the valley of the Champlain, and after long experience and observation he observed one thing, which I think is true—that he never saw a case die unless it was attended with a diarrhœa. If he could hold it in check and have constipation, as he remarks, he was sure of the recovery of his patient. He saw further that it was a specific disease, a disease peculiar in its character, with a morbid action, that would continue from two to four and six weeks. He finally came to the conclusion that he would try the experiment of keeping down the temperature. The only thing with which he treated his patients would be to put them in a bed where he could use cold water freely, and he went as far as to use the common watering-pots. He found that in the majority of these cases where he could keep temperature down, his patients recovered. We find that the same treatment at the present day is the treatment that is most successful. Typhoid fever is a disease of a specific character, as much so as small-pox. We find, as has been alluded to in the paper that has been read to-day, that it consists of a deposit; what that deposit is I shall not tell to-day. Pathology has been run away with on the back of bacteria. We find a certain deposit there, and that he called typhoid. In proportion as we find that deposit, we have no constipation, and he directed his attention, after practicing some little time, to the condition of the bowels. He found in proportion as we get this amount of deposit, we get high diarrhœal action. He also found that the nervous system was involved. There was a change in relation to the fluids, want of proper assimilation, and a condition of the heart that in the majority of cases fails us. Therefore every remedy, so far as my experience goes, that serves to depress the system, is injurious. Perhaps you will call it old-fogyish, and I have acknowledged and prefaced my remarks that it is to a certain extent, but where remedies have served you well, you cannot but believe the facts, for they are stubborn things, and you cannot get around them. You may theorize as much as you please. Quinia, an old remedy, and one too, that has almost gone out of fashion, has been my sheet anchor to relieve the temperature. What is the pathology of this disease? It is a morbid accumulation of animal heat, as the result of specific animal poison in the blood. With all our alteratives we do not produce that which will remove this condition until it has had its run, and that depends

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upon the amount of it, and depends upon the character and condition of this local trouble. I think that there is a great deal too much medicine given, and especially in typhoid fever. It is the duty of every physician to inform the friends of the patient of the necessity for quiet. That is all-important. It is his duty to visit him once or more, and if he does not find any symptoms arising, go away without leaving medicine. Let the patient rest. Stand there as a faithful sentinel over that patient. Rest assured that the disease will have its regular run. The man who says he can break up a case is either a knave or a fool. It will have its run. I think the true practice is safe, conservative practice, and typhoid fever is a let-alone disease. Unless you have symptoms, do not interfere. They will come up soon enough. When they do come up, remember to keep up the tone of the system. Medicine is used as a substitute. It never cured anything. It only just substitutes what is a deficiency. Whenever we find any typhoid fever or condition that has a deficiency, remember you have remedies which will supply this deficiency. Amuse your patient until nature does effect a cure, and do not use too much medicine.

Dr. Wilder. There is one point I wish to call attention to, as being a duty of ours as medical men, and in care of patients subject to this disease, and that is the prevention of its spread in the family and among the friends. I think it is a duty that we owe to the people, and we should pay more attention than is often done. You have doubtless witnessed the spread of this disease where, if a little care had been taken, the spread would have been prevented. There is no question but that it can be stayed in its progress. It spreads, as well as other contagious diseases, as small-pox, measles, scarlet fever. The contagion of typhoid fever does not usually pass through the atmosphere, but the individuals are subject to the poison through the water or through the ingesta. They may be readily protected by proper care of the evacuations. Any carelessness on the part of the attendants leads to the spread of the disease. I think it is the duty of the physicians to instruct the attendants thoroughly, and watch and see that the instructions are carried out, for the safety of the other members of the family. I remember one case which was intimately associated with my own family. A lady was taking care of her sister-in-law across the borderland. It did seem to me, with the reputation the men enjoyed who had the handling of it, they were certainly very careless. They advised no precautions to the attendant, and she consequently, knowing nothing of the disease, contracted it herself. The same physician, in connection with others, attended her; and her daughter, who was her attendant, was the next unfortunate victim, who received it undoubtedly from the care of her mother. Two lives were lost, I firmly believe, through the carelessness of the first physician who had charge of the first case. If he had properly seen to the

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carrying out of the hygienic measures, there would have been two lives saved there. Each of you have undoubtedly witnessed similar experiences. I think it behoves us to be very cautious in that regard. As to the time it should be done, all of us at this time understand that well enough. See that it is done.

Dr. Griswold. I notice that Dr Carpenter remembered everything that was essential for the practice of medicine as we practice it now. There is one point that has not been hit upon that I consider essential in the treatment of typhoid fever, and that is what is done by the physician on his first visit. There are a great many—and I do not know but what we are all prone to do something for the sake of doing something in cases of fever that have the appearance of running into typhoid fever eventually. My experience is that it takes from six to ten days to get patients down into genuine typhoid fever, and, by the way, most of our fevers are called typhoid. They are apt to be so called—so apt that we have a great many cases of typhoid fever, but very few of bilious, malarial, or other fevers. Now, when a physician meets his patient the first time, it is his duty, and sometimes better for him, to study what not to give than to commence an active practice, which a great many do. I always did it myself in early life. Typhoid fever prevails not only in exposed places, but in my experience all over the hilly country. I have found, that if I find typhoid fever sparsely scattered over the country, the symptoms are very much more easily controlled than they are in thickly settled places. Then, too, the sanitary condition may be more easily controlled. But, as I said, I rose particularly to allude to this point, of the condition that the patient is in at the first visit, and not to pursue a course of treatment which is detrimental to the patient.

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GERM ANTAGONISM.

Dr. H. R. Wilder, Swanton, Vt.

We shall not use the term Germ in accordance with the strict definition of the same, but in accordance with its generally accepted use in relation to disease.

Meaning to embrace the source of all organic life in its various forms, from the embryo up through the progressive stages of development, through which it may influence other living organisms.

The term Life is a very comprehensive one when applied to the species or individual. For the known species of the universe visible to the naked eye alone in the fauna and flora are numbered by the hundreds of thousands. Then the species of the microscopical world are equally numerous, only they have not all received their name.

Then as we grope on into that great and mysterious sphere of darkness, into which the microscope—endowed by human ingenuity—has as yet been unable to fathom, and there count the untold influences which, when combined under right circumstances, give distinct results as specific as any of the speciæ of the visual world, then can we begin to comprehend the extent of *Life*.

These untold or unseen combined influences, which are the cause of the specific results, that when summed up are but an expression for Germs, either in its developments in the grades upward in life, or downwards in death. Thus as we contemplate life we dwell upon death, for out of life comes death, and from death life gathers its sustenance.

It is not so that life devours life, or in other words feeds upon what has been created by life, and the cycle is completed where death joins life.

Let us then divest ourselves of the thoughtless idea, that there is no life beyond our present power to examine; for who is prepared to say but what there is, and may yet be found in the Pre-microscopical world, or the mystic realm unseen, the Germs peculiar to itself, and distinct in its nature, that gives rise to the certain effects denominated disease. Of course, not that all germs produce disease, any more than all seeds produce thistles or other noxious weeds.

But as the microscopical world is opened to us, we become aware that we are continually surrounded by germs of many varieties

Miquel, for instance, has found that the ordinary atmosphere of a large city contains over 2,000 bacteria per cubic yard, while the air of the room of an old house in winter will show bacteria to the amount of 45,000 per cubic yard; and again, that the wards of a long used hospital

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will hold as many as 90,000 germs in the same space. Observation seems to show that the different varieties require different conditions for development, each specie varying in its susceptibility to different influences.

That certain diseases are epidemic or endemic undoubtedly depends upon the local and atmospherical influences which favor the development of those specific germs, and also, some influence producing in the system a condition or soil especially favorable for its reception. Or it may be the local influences have multiplied, or permitted to multiply, the specific poisons or germs, to such an extent that the myriads in defiant hosts settle down upon, and infest the unfortunate being, giving rise to a certain symptomatology. It is probable, therefore, that we must have both the presence of the specific germs, and also a fit condition of the system for their development.

For persons of good constitutions, and sometimes constitutions not entirely healthy, may pass through epidemics untouched, while others of a debilitated, or of a certain condition, will be quick to receive and develop the disease.

Or in other words, some systems more readily accept the virus and give way to its specific results. It would, no doubt, astonish us if we could know how extensively the poisons that exist around, and come in contact with us in different ways, are rejected, resisted, and overcome by the human organism.

That these poisonous influences that cause disease, are of a specific kind, and will give rise to a specific disease, is just as probable, as that the germ of the oak acorn will grow an oak instead of a pine, or that the germ of the wheat will produce wheat instead of oats.

What are the diseases Scarlatina, Pertussis, Diphtheria and similar infectious diseases, but the infested human system overpowered by the rapidly reproduced specific poison peculiar to themselves; and these germs have only to exhaust the soil to become extinct, or in other words, terminate the disease.

Facts have been adduced that prove conclusively, that the morbid poisons, whatever their form or natural classifications may be, act in all instances not capriciously, but according to certain definite and fixed laws.

Mingled with the blood yesterday; to-morrow, after having had a period of latency, swarming into innumerable myriads possessing the whole field as a pest, devouring everything before it; in short, passing through the various stages of germination, transition, growth, maturing, and finally death—as the fire passes over the prairie, consuming all that by nature is fit for its ravages, and then dying away.

Such are the remarkable laws of morbid poisons, that many of them possess the extraordinary property of exhausting the constitution of all susceptibility to a second action of the same poison; as is the case with

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syphilis, scarlatina, measles, typhoid fever, small-pox, whooping cough, and indeed with a considerable number of others. And in fact, temporary protective influences is imported by most all morbid poisons; for few persons suffer a second attack of the same specific epidemic disease; and at least, the susceptibility of the constitution is temporarily impaired. These morbid poisons or epidemic influences are now nearly, and soon probably will become entirely synonymus, with the term Germ, as used in its ordinarily broad meaning.

But that some of its numerous organic forms are actually necessary in the economy of life can not be intelligently disputed, for as Sir Wm. Roberts says: "Without Saprophytes there would be no putrefaction; and without putrefaction the waste materials thrown off by the animal and vegetable kingdoms could not be consumed. Instead of being broken up, as they are now, and restored to the earth and air, in a fit state to nourish new generations of plants, they would remain as an intolerable incubus on the organic world. Plants would languish for the want of nourishment, and animals would be hampered by their own excreta, and by the dead bodies of their mates and predecessors; in short, the circle of life would be wanting an essential link. A large proportion of our food is prepared by the agency of saprophytes. We are indebted to certain bacteria for our butter, cheese and vinegar. Our daily bread is made with yeast, and to the yeast plant we also owe our wine, beer and spirituous liquors."

It is not necessary to look to that extreme view denominated spontaneous production, for these germs readily enough multiply when they find the desired soil. They may exist either upon or in plant or animal, and be transmitted or communicated indifferently from animal to man, or man to animal, or from vegetable to animal. For plants as well as animals have their peculiar parasites and parasitic diseases. They may be either vegetable or animal. The oak, apple or gall nut is a familiar example of the large animal parasite affecting a plant. Then there are the *blights*, *mildew*, smut, brand and other forms of fungi that are capable of propagation and transmission. Yet each species is affected more particularly by its particular parasite, and these are themselves affected by their own parasite, and so on almost indefinitely, each one antagonized by some other.

This series might be continued on down through the microscopic field, into that which has not been explored, and including those influences or germs that affect the human organism in such a manner as to cause the conditions we call disease; for who can dispute but what all infectious, epidemic, endemic and malarial diseases, are but the result of a special multiplying parasite, or microphyte, infecting the blood or tissues of the body. That these special germs do not always multiply and develop, causing disease, is no more a cause of wonderment, than

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that germs of a higher order of life do not always find lodgement in soil adapted for their development. The seed of fire-weed for instance, may pass over acres of tilled soil and miles of forest, before it finds a suitable place prepared by fire for its growth. So too, small-pox germs may be present and some systems be very indifferent to their reception, because the soil is not just right. So also, there is the inherent power of all organic life to resist oppression.

The power of the human system to resist poisonous influences is something remarkable; yet, when infested by rapidly multiplying hordes of life, it often succumbs for a time, or in other words, the system is overpowered until the soil is exhausted, and the germ dies for want of food, or is swallowed up by some other germs. And so we are only to stop and reflect upon the many ways in which the body is beset by these antagonizing germs; the air we breathe swarming with its clouds of life, the food we eat, and the water we drink, permeated in every particle, and the primordial cells, where ever uncovered by accident or by the surgeon, sought after by the insatiable and rapacious appetite of these mysterious beings; then we may begin to comprehend the unlimited power that relentlessly antagonizes back to the mother dust.

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EYE-STRAIN AND FUNCTIONAL NERVOUS DISEASES.*

J. H WOODWARD, M. D., BURLINGTON, VT.
Professor of Diseases of the Eye and Ear, University of Vermont.

Mr. President—Gentlemen :—

I have chosen to speak to you of Eye-Strain and Functional Nervous Diseases, because the discussion will take us into a field of practice in which the general practitioner and the opthalmologist have common interests. We are both engaged in the attempt to relieve the same class of patients. You have no doubt seen in medical literature extending over the past four or five years, many references to this particular subject, and you will remember that the discussion of it has been animated and extremely acrimonious. The most noteworthy contributions to it have come from the pen of Dr. George T. Stevens, of New York, who was the first to direct attention to its importance, and who has done more than any other investigator in this department to advance our knowledge. During the past four years, I have devoted considerable time to the study of eye-strain and its effect on the general system, and I desire to lay before you now the first preliminary report of the results of my observations.

In the first place, you will ask, what is eye-strain? What does the term signify?

In the normal state, distinct vision is obtained by a minimum expenditure of nervous energy. The visual apparatus, in the normal state, is represented by the emmetropic eye, and by properly balanced ocular muscles. In the emmetropic eye, parallel rays of light, or rays reflected by distant objects, are brought to a focus on the retina, *while the eye is at perfect rest;* and divergent rays of light, or rays reflected by near objects, are brought to a focus on the retina by virtue of the contraction of the ciliary muscle, involving a minimum expenditure of nervous energy. At the same time, distinct binocular vision is secured by the consentaneous and involuntary contraction of the ocular muscles. Under these circumtances the function of sight is performed without annoyance or discomfort. But there are instances of deviation from the normal, some of which go to make up the condition known as eye-strain. Now Eye-Strain may be said to exist whenever, in the attempt to obtain distinct vision, there is an expenditure of nervous energy in excess of the normal. Accepting this general definition as true, we find that eye-strain may be the

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product of a variety of causes: (1) It may be due to an error of refraction; (2) to some fault in the ocular muscles; or (3) to a combination of an error of refraction and a fault in the ocular muscles.

EYE-STRAIN FROM AN ERROR OF REFRACTION.

Of all the errors of refraction, Hypermetropia is by far the most common. The hypermetropic eye is too short in its antero-posterior diameter; consequently parallel rays of light are not, *when the eye is at rest*, brought to a focus on the retina, but behind it. Patients possessed of such eyes usually have normal vision. Often their vision is extremely acute, but this acuteness of sight is obtained by an excessive expenditure of nervous energy through the contraction of the ciliary muscle, which is always necessary to give the hypermetrope normal vision. Now it is unquestionably true that every eye, whether it has an error of refraction or not, is always endeavoring to secure distinct vision, no matter what the effort may cost; so that in hypermetropia the patient is always in a condition of eye-strain.

Another common error of refraction is Astigmatism. The two common varieties are the Hypermetropic and the Myopic. When we speak of Hypermetropic Astigmatism, we mean that the radius of curvature of the cornea is normal in one meridian and too long in the opposite. Such an eye, looking at the arms of a cross, may see the shaft distinctly, but the arms are blurred. It is astigmatic in one meridian. In one meridian the rays of light are brought to a focus on the retina, and in the other they are brought to a focus behind it. A similar condition prevails in Myopic Astigmatism. The radius of curvature is normal in one meridian and too short in the other, and the rays of light are brought to a focus accordingly. In one meridian the image is distinct, in the other it is indistinct. Besides these simple varieties of astigmatism, we find compound varieties. We find Hypermetropia with Hypermetropic Astigmatism, and Myopia with Myopic Astigmatism, and we occasionally see examples of mixed and of irregular astigmatism. When you reflect upon the fact that every one instinctively attempts to secure perfectly distinct vision, you are in a position to appreciate the struggle of one of these astigmatic patients He must contract the ciliary muscles irregularly in order to secure sharply defined retinal images, so that a patient having astigmatism is always in a condition of eye-strain dependent upon his error of refraction.

There is another error of refraction known as Myopia, or short sight. That error is not so commonly attended with eye-strain as the other forms I have mentioned. The patient cannot make any effort of the muscle of accommodation that will give him distinct distant vision. Eye-strain, in these cases, arise from the fact that the image is blurred,

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and the patient is always endeavoring to determine what the blurred image means.

Finally, we find Presbyopia. This is an acquired state. It is a fault in the accommodation. The accommodation is normal up to forty, and then begins to fail. The condition of Presbyopia is developed as a fault of the accommodation, by virtue of the diminished elasticity of the crystalline lens; and most patients, after 40 years of age, unless provided with correcting glasses, must compensate their presbyopia by an excessive contraction of the ciliary muscle.

EYE-STRAIN DUE TO SOME FAULT OF THE OCULAR MUSCLES.

While it is unquestionably true that there is a strong instinctive impulse to secure distinct retinal images, it is equally true that there is an instinctive impulse quite as strong to secure distinct binocular vision. Diplopia is avoided at almost any cost. Indeed, the abhorrence of it is so great, that in strabismus, even when the vision is 20–20 in each eye, we not unfrequently see patients who persistently fail to observe with both eyes at the same instant. This will not seem very strange to any one who has seen a case of diplopia. Patients suffering with it seem to have lost the proper sense of contact with the external world, and their very existence depends upon the suppression of the false image and the re-establishment of single vision. The ocular muscles, in the normal state, secure to the patient binocular vision without fatigue. These muscles, however, are often found in abnormal states. They may be weak, or they may have a faulty tension; and both weakness and faulty tension of the ocular muscles are common causes of eye-strain.

When a patient whose internal recti muscles are weak, attempts to see distinctly either a distant or a near object, he can do so only by an excessive expenditure of nervous energy. The muscular weakness is compensated by an excess of nervous impulse to the weak muscles. For instance, a patient is afflicted with headache, nervousness and insomnia. The general practitioner can find no cause for the trouble. There is no affection of the stomach. In short, none of the organs are diseased. The patient goes to an oculist who discovers an error of refraction, and glasses are prescribed. The patient is sent away in the hope that the headache, the pain in the back of the neck, and the insomnia will be relieved and that his general health will be much better. He returns to his work, but the headache still continues, he still suffers with insomnia. His general condition is very little better than at first. Discouraged, he gives up his work, and goes to the country. After several weeks he returns, eats well, sleeps well, is well—apparently. But in a few weeks he breaks down again with the same symptoms as before. Then he goes

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again to the oculist, and a weakness of the muscles of the eye is detected. Exercise of the muscles by the means of prisms is begun, and the patient's condition improves as the muscles grow stronger. The pain in the back of the neck disappears, the headaches are gone, and the insomnia is cured; and this treatment has been carried out while the patient is attending to his regular business. When the ocular muscles are restored to their normal strength, the patient is cured, and perhaps remains well for the remainder of his life.

FAULT IN THE TENSION OF THE MUSCLES.

Eye-strain may be a consequence of faulty tension of the ocular muscles. This faulty tension in the ocular muscles may manifest itself in a tendency to the crossing of the visual lines, or to a divergence of the visual lines, or in a tendency of one visual line to rise above the other. We are indebted to Dr. Stevens for a series of terms which exactly define these conditions. For instance, in Orthophoria the ocular muscles are in a state of equilibrium. In Heterophoria, there is some fault in the tension of the ocular muscles. By Esophoria, we understand a tendency of the lines to cross. In Exophoria, there is a tendency of the visual lines to diverge. There is, moreover, a condition known as Hyperphoria, in which the tendency of the visual lines is to rise the one above the other.

Now you may appreciate the state of things that would exist in Hyperphoria, for instance, by supposing that the visual line of my right eye tends to rise above the left. There is a tendency then to doubt vision, and in order that the vision may be single and distinct, I must throw an excessive amount of nervous energy into the antagonistic muscle to bring the eyes to a level. You can imagine how difficult such a thing would be to accomplish, especially in reading; for, in addition to the necessary convergence, I must throw an abnormal impulse into the inferior rectus. This condition is often the cause of headaches and other nervous disturbances.

RELATION OF EYE-STRAIN TO FUNCTIONAL NERVOUS DISEASES.

Having now shown how eye-strain may cause a waste of nervous energy, I will proceed to point out the relationship that exists between it and functional nervous diseases. At the outset, however, permit me to call your attention to the fact that eye-strain may exist without any apparent injury to the patient. But, although the condition may not at present give rise to any trouble, it is, nevertheless, a constant menace to the vigor of his health; and the only reason to be assigned for the immunity which he enjoys, is that his system is strong enough to furnish more energy than is required to perform the functions of the normal man.

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By functional nervous diseases, we mean those disturbances of the health in which no special anatomical lesion is found in the organ affected. They have no pathology. At least modern investigations has not discovered any pathological changes to account for many of these cases. In this category are classed most cases of headache, neuralgia, neurasthenia, chorea, hysteria, epilepsy and insanity. Neurasthenia is nervous exhaustion. Chorea, hysteria, epilepsy and insanity are all states of perverted function. Headache and neuralgia are observed when the nerve tissue is congested or hyperæmic, when it is anæmic are when it is poisoned by the taint of syphilis or malaria. All these conditions are associated with some change in the nerve tissue which manifests itself in perverted function, that is, in this instance, pain. Of course it will not be denied that syphilis and malaria are commonly the efficient cause of this change in the nerve tissue. Nor would I hesitate to admit that congestion, hyperæmia and anæmia do cause pain. But we may seriously doubt, I think, that those conditions are frequently the efficient cause of headache and neuralgia. There may be engorgement of the blood-vessels of the painful tissue during the paroxysm, but it is quite as likely that it is an associated phenomenon, as that it is the cause of pain. I hesitate less in stating this proposition because the medical treatment of hyperæmic and congestive headaches and neuralgias is not satisfactory. The numerous remedies suggested may mitigate the severity of the attack, but they are not very efficient in preventing further attacks. They do not eradicate the underlying evil. Moreover, the very multiplicity of remedial agents for a given malady invarably indicates that the medical treatment of it is, to say the least, not understood. But such cases frequently yield to treatment directed to the relief of eye-strain. Recurrence of the attacks is prevented, and the patient is cured. Indeed, among oculists it is not an uncommon experience to relieve in this way cases of congestive, hyperæmic and anæmic headaches, which have been through the hands of a dozen or more physicians without receiving any special benefit.

The system can supply a certain amount of energy, and no more. There is a limit to its powers in this direction; so that when there is an excessive waste of nervous energy, and the normal requirements of the system can no longer be met, the patient will suffer from some functional disturbances of one or more of the organs of the body. Oftentimes eye-strain causes such a waste of nervous energy, and consequently a functional disturbance of the system. Even the most conservative doctor will now admit that *occasionally* headache is due to some disturbance of sight, and less frequently will he acknowledge that neuralgia, especially of the cranial nerves, may be due to a similar disturbance. This acknowledgement has only been wrested from him by demonstrating over and over again that headache and neuralgia are often caused by the eyes. At present the controversy is waged over eye-strain as a cause of chorea,

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epilepsy and insanity. It is alleged by some that chorea is due either to a lesion of the heart or to the poison of rheumatism ; and a recent writer has attempted to establish the pathology of chorea by a detailed account of the post-mortem examination of a single case. But, strange to say, these gentlemen are loath to admit the possibility that chorea may be the consequence of a fault in the visual apparatus.

Perhaps the greatest controversy has been over epilepsy. I am free to admit that it may well seem strange to one who is not familiar with the effects of eye-strain, that epilepsy may be due to such a condition. Still, in view of the published cases of epilepsy which have been cured by treatment of the eyes, we are no longer justified in excluding eye-strain from the list of causes of this terrible malady. I cite from the writings of a well known neurologist* a list of the causes of epilepsy which are admitted by him:—heredity, sex, traumatism, syphilis, prolonged lactation, intestinal worms, gall stones, fright, carious teeth, anæsthesia, concussion of the brain, uterine and ovarian diseases, toxic causes, gout, malaria, congestion, exanthemata, cerebral anæmia, preputial irritation, vesical calculus, masturbation, gastric disturbances, injury of nerves, neuromata, and affections of the ear.

This is certainly a liberal etiology, and it seems to me that one who is willing to admit that epilepsy may be due to all these causes, should not deny the probability that eye-strain is sometimes the efficient cause of that disease.

I have already consumed sufficient time in a preliminary discussion, and I will proceed to a citation of the evidence which I desire to present at this time. From my case books, I have extracted one hundred and fifty consecutive cases of non-organic headache. The first case was under my observation four years ago. In 85% of these the treatment was successful. In sixteen cases the treatment failed. Among the failures may be classed those cases in which possibly I made an incorrect diagnosis, or failed to relieve the eye-strain. In the following table you will find a detailed account of each of these cases.

*Pepper's System Medicine, V. 468.

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ONE HUNDRED AND FIFTY CONSECUTIVE CASES OF HEADACHE TREATED FOR THE RELIEF OF EYE-STRAIN.

Result unknown in.... .....28 cases
Refused to, or could not, follow advice.....19 "
Failed in..... .....16 "
Result known in..... .....103 "
Success, about eighty-five per cent.

Case 1. Emma C , 8 years; 1885. For three years has complained of pain in back of her head when tired. Says she cannot see work on blackboard at school. Has "nervous spells," in which she has chills, is feverish, and delirious when drowsy. Heavy feeling in her head; says things look yellow. V. 20-20 in each eye. R., Simple hypermetropic astigmatism; L , hypermetropia. Correcting specs for constant use. Relieved.

Case 2. Miss F. B., 1885 Asthenopia. Severe congestive headache at every monthly period. Ovarian dysmenorrhœa of severe grade. R. V., 20-20 L V., 20-20 Simple hypermetropic astigmatism in each eye. Correcting glasses for reading. Asthenopia relieved. Headache not affected.

Case 3. Mr. Q , 1885. Fracture of right ramus of lower jaw by kick of a horse. Was near-sighted prior to injury, and suffered from vertigo and headache after studying. Still has frequent attacks of headache and vertigo. R. V., fingers at 16 ft.; L. V., fingers at 16 ft. Myopia. Ordered partial correction. Relieved.

Case 4 Miss A. S., 1885. Headache and lachrymation in right eye after reading. Has pelvic trouble, for which she is under treatment. V. 20-20 in each eye. Simple hypermetropic astigmation. Correcting glasses for reading. Relieved.

Case 5. Miss L. M., 1885. Headache through temples and top of head; occasionally pain in back of neck. R. V., 20-30; L. V.. 20-40. Simple myopic astigmatism. Prescribed specs for constant use. No result—advice not followed.

Case 6. Mrs C. D., 1885. Headaches and nausea after reading or sewing. Had the same symptoms four years ago, and was relieved by glasses; but her glasses do not relieve her now. R. V., 20-20; L. V., 20-20. Simple hypermetropic astigmatism. Prescribed correcting glasses

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for near work. Relieved. Remained well till 1889; saw her July 25th.; anæmic; has headaches and nausea, and dyspepsia. V. normal in each eye. Glasses are correct. Esoph 1°; exoph. in accom. 2°; abduc 5°; adduc 12°. Ordered Blaud's pill and essence of pepsin, and exercise of ocular muscles. Much improved one month later.

Case 7. Mrs. A. F. S., 1885. Headache nearly constant. Asthenopia and vertigo. R. V., 20-30; L. V., 20-30. Comp. hypermetropic astigmatism Prescribed correcting glasses for constant use. Relieved, but uses specs chiefly for near work. 1887—Headaches returning; changed glasses. Relieved promptly.

Case 8. Miss E. W., 1886. Headache in morning and after using eyes. V. 20–20 in each eye. No relief.

Case 9. Prof. E. H. D., 1886. Severe and almost continuous headache across forehead, and pain through eyes. Asthenopia and tendency to convergent strabismus. V. 20–20 in each eye. Simple hypermetropic astigmatism. Prescribed correcting glasses for reading. Relieved. 1887—Blepharitis and some headache. Pagenstecher's ointment reduced, and advised constant use of specs. Relieved, and has remained well to date.

Case 10. Miss E. M., 1886. Asthenopia and severe headaches. R. V.,20–50; L V, 20–70. Comp. hypermetropic astigmatism. Prescribed correcting specs for constant use. Unknown.

Case 11. Mrs. V., 1886. Headache; asthenopia; frequent nausea; occasional diplopia; epileptiform convulsions. R V., 20–30; L. V., 20–40. Simple hypermetropic astigmatism. Prescribed correcting glasses. Unknown.

Case 12. Mrs T., 1886. Headache in vertex; pain in back of neck and in and behind eye-balls. Vertigo Pelvic trouble for which she is under treatment. R. V., 20-40; L. V., 20–30. Exact error not made out. No prescription—advised to come again. No result.

Case 13. Miss C. B., 1886. Eight years ago had severe headache and "drawing sensation in eyes." Relieved by glasses. 2½ years ago relapsed, and was relieved again in the same way; has the same symptoms now. Comes from a very nervous family. R. V., 20–70; L. V., 20–70. Mixed astigmatism. Prescribed correcting specs. Relieved. 1889—Have seen her since suffering from headache, but she was anæmic as a consequence of domestic troubles and sickness. Relieved by rest and iron.

Case 14. Miss C. D. P., 1886. Headaches; asthenopia. Presbyopia. Prescribed reading glasses. Unknown.

Case 15. Miss E, 1885. Headache and pain in eyes for many years. R. V., fingers at 20 ft.; L. V., fingers at 20 ft. Myopia; insufficiency of interni. Prescribed reading specs with pris. 2° base in. Tonic of iron, arsenic and mercury, and dil. phosphoric ac. 1886—has not suffered

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from headache since she began using the glasses. Has taken twelve ounces of tonic. Ordered distance specs. Has not reported since.

Case 16. Mrs. L., 1886. Frequent headaches; is very nervous. Headaches worse after using eyes. Has pelvic trouble which seriously affects her general health. R. V., 20–50; L. V., 20–30. Symple hypermetropic astigmatism. Prescribed correcting specs for constant use. Unknown.

Case 17. Miss L., 1885. Nearly constant headache; very severe at monthly period. Has pelvic trouble, which is under treatment. R. V., 20–40; L. V., 20–40. Comp. myopic astigmatism. Prescribed correcting specs for constant use. 1886—headaches less severe; she prefers to use the specs. Pelvic trouble improved.

Case 18. Mrs. R. W., 1885. Headache, nausea, nervousness, insomnia, and vertigo. Presbyopia and insufficiency of interni. Correcting specs with prism for near work. Unknown.

Case 19. Mrs. G., 1886. Headache located in vertex and pain in back of neck for two years. Pain in eyes, feels that she must keep eyes closed. Every time she reads or sews has pain in top of head and back of neck. V. 20–20 in each eye. Simple hypermetropic astigmatism. Correcting specs. No relief; saw her but once, and could not use atropine.

Case 20. Mrs. J. P., 1885. Headaches for years; pain begins on rising, and continues all day; frequent vertigo. Asthenopia. R. V., 20–20; L. V., 20–20. Simple hypermetropic astigmatism. Correcting specs. Partial relief. 1889—Saw her again; has headache, vertigo, pain in back of neck, dyspepsia, confused feelings in head; changed her glasses. Saw her a few times, and result unknown.

Case 21. Mr. F. E. M., 1883. Considerable headache; sick-headache twice each week; frequent vertigo; occasional diplopia; duration of symptoms, 1 year. R. V., 20–20; L. V., 20–20. Simple hypermetropic astigmatism. Correcting specs for constant use. 1887—Headaches relieved; no diplopia, and tendency to squint troubles him but little. Glasses trouble; changed to comp. hypermetropic astig. in R. and increased strength of glass for L. Relieved.

Case 22. Mr. H. H., 1886. Nearly constant headache; dyspepsia, hypertrophic rhinitis. R. V., 20–20; L. V., 20–20. Simple hypermetropic astigmatism. Correcting specs for constant use, and treatment for his catarrh. No relief. 1887—Developed melancholia; sister also insane. Glasses correct. Astig. orthophoria except adduc.=only 18°. Made only one examination. Recovered his mental strength after a few months.

Case 23. Miss E. M., 1886. Nervous headaches once or twice each week. General health good. Pains in eyes. R. V., 20–70; L. V., 20–70. Hypermetropia. Correcting specs. No relief—two visits.

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Case 24. Mr. C. P., 1886. Occasional very severe headaches. Distant vision indistinct. R. V., 20–70; L. V., 20–70. Simple hypermetropic astigmatism. Prescribed correcting specs. Headache relieved. 1889—Reports a return of headache, but has not been able to visit me again.

Case 25. Mrs. M. S., 1886. Dull headache across forehead; vertigo in the sunlight; very nervous; general health poor. R. V., 20–20; L. V., 20–20. R., comp. hypermetropic astigmatism; L., Simple hypermetropic astigmatism. Correcting specs for constant use. 1887—Headache and vertigo cured by the specs. 1889—Broken down by domestic troubles. Neurasthenia, for which she has been under treatment by a specialist. Thinks her glasses need changing. Prescribed a change of right lens. L. Hyperph. ¾ esoph. 2 in accom.; 4 adduc. 20; abduc. 6.

Case 26. Miss L. B., 1883. Frequent headache in vertex; vertigo and occasional nausea. Asthenopia. R. V., 20–20; L. V., 20–20. Symple hypermetropic astigmatism. Correcting specs. Unknown.

Case 27. Miss M. S. C., 1886. Frequent headache; pain is located about eyes and in top of head; occasional vertigo. R. V., 20–40; L. V., 20–40 Simple hypermetropic astigmatism. Correcting specs. Improved.

Case 28. Miss N., 1886. Headache due to use of eyes in studying. R. V., 20–20; L. V., 20–20. Simple myopic astigmatism. Correcting glasses for studying. Unknown.

Case 29. Miss K. F., 1886. Very frequent headache; sick-headache after every snow storm; dyspepsia and resulting palpitation of heart. Homatropine. R. V., 20–30; L. V., 20–30. R., comp. H. Astig; L., simp. H. Astig. Correcting specs. Complete relief at once. She is a trained nurse, and at the time was attending a case of neurasthenia. 1888—While nursing a difficult case her headaches began to trouble her; changed her specs, and was again relieved, and has remained well to date.

Case 30. Miss B. G., 1886. Some headache; asthenopia. V. 20–20 in each eye. Comp. hypermetropic astigmatism in each eye. Correcting glasses for reading. Unknown.

Case 31. Miss W., 1887. Formerly suffered much with headaches, but was relieved by glasses. Pain in R. E. after reading; confused feeling in head; pressure across forehead; occasional vertigo; flashes of fire before both eyes, and is sometimes kept awake by it. R. V., 20–200; L. V., 20–20. R., comp myopic astigmatism; L., simple myopic astigmatism. Correcting glasses. Relieved.

Case 32. Miss B. S., 1887. Constant headache; pain in back of neck; confused feeling in head. Atropine. R. V., 20–30; L. V., 20–30. Hypermetropia; s+0.75 for each eye. Exophoria. Was given, contrary to my advice, s+0.75 L. pris. 1° base out each eye. No relief. 1889—Constant headache; has worn the glasses to date; has tried a variety of treatment, but no result; confused feeling in head; is in poor

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health. Exoph. 4 in accom. 9; abduc. 9; adduc. 19. Advised Stevens' operation on ext. rectus tendon. Caused her to leave off her specs, with result of improving her condition. Refused operation.

Case 33. Mrs O., 1887, Feb. Headache, sometimes continuous for 2 or 3 weeks; sick-headaches; cannot read in the evening without having a headache on the following day. R. V., 20–100; L. V., 20–20. R., mixed astigmatism; L., myopic astigmatism without atropine. Correcting lenses for constant use. May 1887—Reports that she has not had one of her old sick-headaches since she began wearing the glasses. Dec., 1887—Enfeebled by domestic anxieties of serious nature. Dyspepsia. Advised her to go away for her health; has severe headache. 1888—Saw patient again, when she told me that her glasses had relieved her head very much.

Case 34. Mrs E. H. D., 1887. Frequent sick-headaches; eyes painful after using them. Vertigo. R. V., 30–30; L. V., 20–30. Comp hypermetropic astigmatism in each eye. Correcting lenses. Relieved.

Case 35. Miss W., 1887. Constant headache during past year; sick-headache once in 2 or 3 months; sight blurs when she reads. R. V., fingers at 20 ft.; L. V., fingers at 20 ft. Myopia. S—6 D. V. 20–50; S—6 D. V. 20–50 ordered. Has been wearing much stronger lenses. Relieved.

Case 36. Mrs. H. C. T., 1887. Headaches, formerly violent, but during the past year they have been less severe. R. V., 20–50; L. V., 20–50. R., simple hypermetropic astigmatism; L., simple myopic astigmatism. 1888—correcting lenses without atropine. Is relieved of headache and nervousness when she wears her glasses.

Case 37. Mrs. H. W., 1887. Headaches brought on by riding in cars, on the water, or by reading. Pain is very severe, and continues from a few hours to several days. Have been treated by a number of physicians for a variety of troubles, but nothing has relieved her headaches. Is often compelled to go to bed with the pain, and has been obliged to give up excursions on the water, and rides as little on the cars as possible. R. V., 20–30; L. V., 20–20. R, simple hypermetropic astig.; L., comp. hypermetropic astig. Correcting glasses to be worn constantly for a few weeks, and then for reading and for distance when necessary. Relieved, and has remained free from headache up to date.

Case 38. Mr. J., 1887. Frequent headache. R. V., 20–20; L. V., 20–20. Comp. hypermetropic astig. in each eye. Correcting glasses. Relieved.

Case 39. Dr. M., 1887. Pain in back of head after reading. Asthenopia. R. V., 20–20; L. V., 20–20. Simple myopic astig. in each eye. Correcting glasses for reading. Unknown.

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Case 40. Mrs. L. G. B., 1887. Constant headache over both eyes. R. V., 20–20; L. V., 20–20. Refraction not determined; did not use atropine. Prescribed by guess. No relief.

Case 41. Miss J. M. F., 1887. Chronic headache. R. V., 20–20; L. V., 20–20. S. hypermetropic astig. in each eye. Correcting glasses. Unknown.

Case 42. Miss E. A., 1887. Constant headache. Nervous spells at night; awakens "trying to catch her breath." R. V., 15–200; L. V., 15–200. Myopia, with floating bodies in vitreous in both eyes. Advised to return for another examination, and advised her to change her occupation to work requiring less use of eyes. 1888—has followed advice given as regards work; has headaches still, but less severe. Ordered S—2.50 for each eye as partial correction. Saw her several months later, when she reported relief from her headache; she wished different glasses for reading.

Case 43. Mr. P., 1887. Photographer; complains of headache and inability to correctly focus his camera. R. V., 20–20. S. hypermetropic astig. in each eye. R., c+0.25 ax. 90; L., c+0.50 ax. 120. Relieved.

Case 44. Mr. S. S. D., 1887. Complains of frequent headaches across forehead; has post-nasal catarrh, which is not severe enough to cause headache. R V., 20–20; L. V., 20–20. Presbyopia. Correcting glasses for desk work and for reading. Relieved.

Case 45. Mrs. H. M. F., 1887. Frequent headache lasting from 2 to 4 days. Dyspepsia and chronic diarrhœa; is very nervous. R. E. V., 20–70; L. E. V., 20–30. R. S. hypermetropic astig.; L., comp. hypermetropic astigmatism. Correcting glasses. 1888—Less headache. Changed right lens Final result unknown.

Case 46. Mrs. R. H. B., 1887. Sick-headaches once in 2 or 3 weeks, is obliged to go to bed with them. Pain in eyeballs, temple and back of neck. R. V., 20–20; L. V., 20–30. R, comp. hypermetropic astigmatism; L., hypermetropia. Correcting glasses. 1889—Reports relief from pain in eyes, and partial relief from sick-headaches. Saw her twice only, and did not use atropine.

Case 47. Miss G. B., 1887. Frequent sick-headaches; blind spells; very nervous and hysterical. Comp myopic astigmatism. Correcting glasses. Blind spells relieved; no effect on headache or hysteria. Saw her once only, and could not use atropine.

Case 48. Mr. J. H. G., 1887. Sick-headache all his life; attacks occur every two weeks; blurring of sight precedes the attacks. R. V., 20–20; L. V., 20–20. R., simp. hypermetropic astig; L., comp. hypermetropic astig. Presbyopia. Correcting glasses for distance and for reading. 1888 has not suffered from headaches since he began using the glasses. 1889–Remains well so long as he wears the glasses sufficiently.

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Case 49. Miss E. S., 1887. Constant headache for one year. R. V., 20-20 ; L. V., 20-20. Is using c+0.50 a 40 for each eye ; exoph. 1 ; abduc 8 ; adduc. 10 Advised atropine. Did not return

Case 50. Miss E. H., 1887. Headaches following use of her eyes. R. V., 20-20 ; L. V., 20-20. Myopia. Correcting glasses. Relieved.

Case 51. Mrs. W. J. H., 1887. Sick-headache once a month for one year. Asthenopia. R V., 20-40 L. V., 20-40. Myopic astigmatism. Correcting glasses to be worn constantly. Advice not strictly followed ; used glasses chiefly for reading. Asthenopia relieved ; headaches not affected.

Case 52. Mr. C. G. B., 1887. Sick-headache once a week. During the attack of headache is usually nauseated and sometimes vomits ; "Bilious temperament." R V., 20-30 ; L. V., 20-70. Myopic astig. Correcting glasses, to be worn pretty constantly. Used the glasses chiefly for reading. Almost complete relief from headache.

Case 53. Mr. L. W., 1887. Headache, pain chiefly in back of head. Dyspepsia and nausea. Astigmatism. Unknown.

Case 54. Mrs. R. C. T., 1887. Five years ago was treated for severe and recurring headache, and by Dr. Stevens for relief of eye-strain. Remained well until six months ago, when the headache returned ; has considerable pain in back of her neck. R. V., 20-40 ; L. V , 20-40 Hypermetropic astig. Correcting lenses for constant use, without atropine ; patient suffering with a severe headache during examination. Feb. 1888 —Reports relief from pain. Dec. 1888—Has headache whenever she reads or sews. Increased the strength of lens for R. E. Esoph 2° ; in accom. 8° ; abduc. 4 ; adduc 10°. Exercise of ocular muscles till adduc. 20° Loaned prisms base out 1° each eye, for use, together with her cylindrical glasses, in reading and sewing. After a month's using returned prisms and reported herself well, and has remained well to date.

Case 55. J. D., 1888. Constant headache. Refractive error not ascertained, for patient could not read, and atropine was not used. Used a variety of medicinal treatment. No relief.

Case 56. Mr. W. W. W., 1888. Headache through top of head twice each month ; occasional sick-headache ; very nervous ; insomnia ; indistinct distant vision. R. V., 20-200 ; L. V., 20-200. Myopia. Correcting glasses. Relieved.

Case 57. Mrs. E. L. W., 1888. Headache ; pain located across forehead on top of head ; has had pain down back of her neck for past six months. Headaches follow using her eyes. Hypermetropic astig. and presbyopia. Correcting glasses. No report.

Case 58. Mrs. S. C. S., 1888. Sick-headache very frequent ; very nervous ; asthenopia ; has pelvic trouble. R. V., 20-40 ; L. V., 20-20. R., comp. hypermetropic astig. L., hypermetropic astig. Without

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atropine. Correcting glasses for constant use. Seldom has headache, wears the glasses constantly. Almost complete relief.

Case 59. Mrs. F. P., 1888. Pain in eyes and forehead, and neuralgic pains in back of neck. Asthenopia. R. V., 20-40; L. V., 20-50. Astigmatism. Correcting glasses. Partial relief.

Case 60. Miss M. G., 1888. Headache and constant uncomfortable feeling in her head. Asthenopia. R. V., 20-30; L. V., 20-70. Myopic astig. Correcting glasses. Would not use the glasses. When atropine was recommended, she discontinued treatment.

Case 61. Miss A. K., 1888. Very frequent headache, associated with nausea, obliged to go to bed with the pain, which is located in forehead and back of her neck. R. V., 20-30; L. V., 1½-200. R. hypermetropic astig.; L., myopia. S.,—8 D. V., 20-150. Corrected the astigmatism in R. E. Relieved.

Case 62. Mrs. B. D., 1889. Headache all her life; dyspepsia; has found no relief in medicine. R. V., 20-20; L. V., 20-20. Hypermetropic astig. in each eye. Presbyopia. Correcting specs for constant use. Would not wear the glasses. No relief from headache or dyspepsia.

Case 63. Mrs. C. M. W., 1888. Severe headache; asthenopia. Hypermetropic astig. in each eye. Corrected. No report.

Case. 64. Miss J. D., 1888. Nearly constant headache through temples, eyes, back of head and vertex. Occasional hemianopsia; vertigo; occasional diplopia; nausea; constant pain in back of neck and between shoulders. Constant pain in lower dorsal and lumbar regions, probably resulting from an injury. Has incurable ovarian trouble; has also uterine and rectal disease. Is excessively nervous, but she is possessed of great energy, and is not disposed to give up to her numerous maladies. Has been thoroughly treated in a variety of ways for her various troubles, but nothing has relieved her head symptoms. R. V., 20-20; L. V., 20-20 Atropine. R. V., 20-200; L. V. 20-200. Jan. 22, 1888—Esoph. 4; abduc. 5. Jan. 25—Esoph. 7; abduc. 3; adduc. 20. Stevens' op. right int. rectus. Patient very nervous, and could not measure accurately the result of the operation. Jan. 31—Comp. hypermetropic astig. With correcting glasses, esoph. 2; without her glasses, esoph. 4. Correcting glasses for constant use.

October, 1889—Patient comes to consult me because when tired she sees her nose too much with her right eye. She is very much less nervous; seldom has headaches, and only when tired, and then the pain is much less severe than formerly. Has no vertigo, no hemianopsia, no nausea, no pain in back of her neck and between shoulders; still has pain in lower dorsal and lumbar regions. She persists in attributing this great improvement in her condition to the treatment which I gave her eyes. She uses her glasses now chiefly for reading. Esophoria 2°;

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abduc. 8–6. Could see her but once, and gave her prisms for reading in addition to her specs.

Case 65. Miss C. C., 1888. Headaches for more than a year, once or twice a week; pain located behind eyes, across forehead and in back of neck. Has been under general treatment without benefit. Her head grows worse; often dizzy in the morning. R. V., 20–20; L V., 20–30. Hypermetropic astigmatism in each eye; esoph. 2; abduc. 10–12; adduc. 20. No report.

Case 66. Miss K. B., 1888. Frequent headache; pain in forehead and temples every day. R. V., 20–70; L. V., 20–70. Myopia. Correcting glasses. No special relief reported.

Case 67. Mrs. P. C. D., 1888. Headache frequent; pain in temples, eyes and in back of neck. Disagreeable feeling about left eye. R. V., 20–20; L. V., 20–20. Rejects all glasses. April 12—L., hyper phoria 1°; exoph. 8; abduc 12; adduc. 10. April 13—L., hyperph. 2°; esoph. 10; abduc. 10; adduc. 15. April 20—L., hyperph. 1°+; exoph. 12°; abduc. 10; adduc 18. April 22—L., hyperph. 1°; exoph. 11°: abduc. 14; adduc. 18. Advised correcting heterophoria by graduated tenotomy and exercise of ocular muscles. Refused treatment proposed: "Nobody should put her eyes out by an operation." No relief.

Case 68. Mr. C. W. P., 1888. Headaches and asthenopia. R. V., 20–20; L. V., 20–20. Hypermetropic astigmatism. Homonymous diplopia with red glass; corrected by prism 10°. Correcting lenses for astigmatism Proposed Stevens' op., which was refused for the present. To return if specs do not relieve him. Did not return No relief.

Case 69. Miss C. S., 1888. Nearly constant headache, which is especially severe when she uses her eyes for near work; is very nervous. R. V., 20–20; L. V., 20–20. Hypermetropic astigmatism in each eye. R., hyperphoria, ½; esophoria, ½; abduc. 7; adduc. 8. Corrected manifest astig. Advised exercise of ocular muscles. Headaches and nervousness relieved when she wears specs, but she relapses when she attempts to go without them. Have seen her but once.

Case 70. Miss R. C., 1888. Headaches. R. V., 20–30; L V., 20–20. Myopia. Correcting glasses. Headache cured by wearing the specs a short time. No relapse.

Case 71. Mrs. W. H, 1888. Headache twice each month, especially in vertex. Uncomfortable feeling in both eyes daily; nervous; asthenopia. R. V., 20–20; L. V, 20–20. Comp. hypermetropic astig. in each eye. Correcting glasses. Result unknown.

Case 72. Miss M. S., 1888. Cannot sew or read without headache. R. V., 20–20; L. V., 20–30. Hypermetropia. Correcting glasses. Relieved.

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Case 73. Mrs. W. L. A., 1888. Asthenopia. Headache in left temple; pain in back of neck; very nervous at times. Astigmatism. Correcting glasses without atropine. No relief.

Case 74. Mr. H P. C., 1888. Headache after reading; obliged to give up school; parents feared his mind would become affected. R. V., 20-20; L. V., 20-20. Hypermetropic astig. in R.; comp. hypermetropic astig. in L. Orthophoria. Correcting glasses. Unknown.

Case 75. Miss M. A. H., 1888. Frequent headache; pain in back of neck; tired feeling in eyes; very nervous. R. V., 20-20; L. V., 20-20. Myopic astig. Correcting glasses. Relieved when she wears her glasses.

Case 76. Miss M. C. N., 1888. Headaches daily; very nervous when she studies or reads; goitre, and rapid heart's action. R. V., 20-30; L. V., 20-30 Hypermetropia; exophoria. Correcting glasses, and Stevens' op. left int. rectus. Relieved.

Case 77. Miss S. S., 1888. Cannot sew without severe headache. R. V. 20-20; L. V., 20-20. R., comp. hypermetropic astig. L., hypermetropic astig. Correcting glasses. Unknown.

Case 78. Mr. W. H., 1888. Frequent headache during the past 8 months; very severe pains in back of head. R. V., 20-20; L. V., 20-30. Hypermetropic astigmatism. Correcting glasses for near work. Relieved.

Case 79. Mrs. J. H. L., 1888. Frequent headache. R. V., 20-20; L. V., 20-20. Co. myopic astig. in both eyes. Correcting glasses, for constant wear. Patient would not wear glasses. No relief.

Case 80. Mrs. C. S C., 1888. Frequent headache upon reading or sewing; pain in eyes; dyspepsia and nervous chills; very nervous at times. R. V., 15-200; L. V., 20-200. Myopia. Correcting glasses for constant use. Relieved.

Case 81. Miss M. S., 1888. Constant general headache. R. V., 20-200; L. V., 20-200. Myopia. Correcting glasses. Fellows' Syr. hypophosph. Co., and rest from work. Treatment of eyes produces no effect on headache.

Case 82. Mr. H. E., 1888. "Bilious" headaches once a week; wears + glasses constantly. R. V., 20-40; L. V., 20-100. Hypermetropia and presbyopia. Glasses for reading. 1889—Saw patient; he is wearing the reading glasses for general use! headaches not relieved.

Case 83. Miss A. F., 1888. Daily headache for three years, located in forehead, vertex and back of neck; has pain in eyes, and blind spells; ulcer of stomach, for which she was treated in M. F. H. R. V., 20-30; L V., 20-30. Hypermetropic astigmatism. Correcting glasses for constant use. Headache much relieved. Occasionally after reading too much, she has headache.

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Case 84. Miss B., 1888. Headache nearly constant, sometimes violent; dysmenorrhœa. R. V., 20–40; L. V., 20-40. Comp. myopic astig. in each eye. Correcting glasses. Unknown.

Case 85. Mrs. R. A. W., 1888. Frequent headache, sometimes violent; pain is located in forehead, vertex and back of neck. R. V., 20–20; L. V., 20–20. Hypermetropic astigmatism. Correcting glasses. No special effect.

Case 86. Mrs. W. B. McK., 1888. Migraine. R. V., 20–70; L V., 20–70. Comp. myopic astigmatism. Correcting glasses. Relieved until recently. For the relapse there is sufficient cause.

Case 87. Mrs. A. A. B, 1888. Headache through forehead and top of head. Pain in back of neck and eyes; brought on by riding and by near work. R. V., 20–70; L. V., 20–70. Myopic astig. Correcting glasses. Atropine not used. No relief.

Case 88. Miss S. C. T.; 1888. Chronic headache once or twice each week for a number of years. R. V., 8–200; L. V., 8–200. R., S—7 D. V., 20–70. L., S—7 D. V., 20–70. Prescribed such glasses. Unknown.

Case 89. Miss M. E. W., 1888. Headache after using her eyes; occasional sick-headaches. R. V., 5–200; L. V., 20–100. R., comp. myopic astig.; L., myopia. Correcting glasses. Relieved.

Case 90. Miss H. H, 1888. Headache; pain in eyes. R. V., 20–20; L. V., 20–20. Hypermetropia. Correcting glasses. Relieved.

Case 91. Mr. J. W. B., 1888. Headache for 25 years; occasional sick-headache; dyspepsia 20 years. R. V., 20–20; L. V., 20–20. Hypermetropic astig. Correcting glasses. Unknown.

Case 92. Miss K. S. B, 1888. Headache for 5 years; asthenopia; anæmia; pelvic trouble. No relief from treatment of eyes.

Case 93. Miss A. G., 1888. Frequent headache in top of head; pain in eyes, sometimes obliged to go to bed with headache; once in two months has sick-headache. R. V., 20–20; L. V., 20–40. R., hypermetropia. L., comp. hypermetropic astigmatism. Correcting glasses. Relieved.

Case 94. Mrs. S. S. B., 1888. Headache for years; pain in back of neck and spine; very nervous. R. V., 20–20; L. V., 20–20. Hypermetropic astigmatism. Presbyopia. Heterophoria. Corrected presbyopia, and tried prisms. Treatment not satisfactorily carried out, owing to unavoidable circumstances. No special relief.

Case 95. Mrs. W. R, 1888. Headaches; asthenopia; is car-sick. R. V., 20–20; L. V., 20–20. Comp. myopic astig. Correcting glasses without atropine. Unknown.

Case 96. Mrs. J. R. K., 1889. Headache; asthenopia R. V., 20–20; L. V., 20–20. Hypermetropia. Correcting glasses. Relieved.

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1889—Increased strength of glasses for headaches, on returning. Returned again, October, 1889—atropine.

Case 97. Miss F. C., 1888. Constant headache; chlorosis. R. V., 20-20; L. V.,20-20. Atropine, R. V., 20-70.; L. V., 20-70. Hypermetropic astigmatism. Correcting glasses. Slight if any relief from glasses, but patient wears them to date.

Case 98. Mrs. D. L R, 1888 Sick-headache for several years, after riding out. R. V., 20-20; L. V., 20-20. Hypermetropic astig. Correcting glasses. Relieved.

Case 99. Miss N D. M., 1888. Nearly constant headache for 8 years, especially after using her eyes. R. V., 20-30; L. V., 20-30. Refraction not made out, could not spare time for atropine. No relief.

Case 100. Miss K. L., 1888. Headaches; frequent sick-headache; pains in back of her neck; pain in eyes; is very nervous. R. V., 20-20; L V., 20-20. R., hypermetropic. L., hypermetropic astig. Correcting glasses for constant use. Later, exercise of ocular muscles. Relieved.

Case 101. Mr. F. S. P., 1888. Some headache; occasional sick-headache. R. V., 20-40; L. V., 20-30. Myopic astigmatism. Heterophoria. Correcting glasses for reading, and prism exercise and electricity. Partial relief.

Case 102. Mr. W. A. H., 1888. Headache across forehead after using his eyes. Hypertrophic nasal catarrh. R. V., 20-20; L. V., 20-30. Hypermetropic astigmatism. Correcting glasses for reading. Borax solution for nose wash. Relieved.

Case 103. Miss H. W., 1888. Nervous headaches for years; formerly had sick-headaches; no relief from medicinal treatment; very nervous; has pain under her shoulder blades. R. V., 20-20; L. V., 20-20. Hypermetropic astigmatism; weak convergence. Correcting glasses. Unknown.

Case 104 Miss B. W. H., 1888. Indistinct vision. R. V., 20-30; L. V., 20-70. R, myopic astigmatism; L., compound myopic astigmatism. Correcting glasses. April, 1889—Severe pain in head and back of neck; easily put out of breath; anæmic; very nervous. Exoph. 2° in accom, 4°; abduc. 8; adduc. 10. Prism exercises and electricity to int. recti.

April 26—Headache relieved. May 2—Much improved already. May 14—Exoph. ½ in accom. 2—3; abduc. 8°; adduc 28. Ordered Blaud's iron. May 23—adduc. 34. May 30—Exoph. in accom. 6; abduc. 8; adduc. 36.

Next visit, June 25 Has symptoms of rose cold; eyes have not troubled her since last visit. Discontinued treatment because she is so well.

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Case 105. Mrs. W. P. T., 1888. Headaches and asthenopia. R. V., 20–20; L. V., 20–20. Hypermetropic astigmatism. Correcting glasses. Relieved.

Case 106. Miss N. S., 1888. Nearly constant headache since she injured her coccyx by falling while skating. Cannot see work on blackboard at school. R. V., 20–20; L. V., 20–40. Myopic astigmatism. Correcting glasses. Relieved.

Case 107. Miss N. M. G., 1888. Headaches and photophobia. R. V., 20–20; L. V., 20–20. Comp. hypermetropic astigmatism. Correcting glasses. Unknown.

Case 108. Miss L. D., 1888. Constant headache; not relieved by medicinal or gynæcological treatment R. V., 20–40; L. V., 20–40. Hypermetropic astigmatism. Correcting glasses. Relieved.

Case 109. Mr. C. D. E. R. Headaches and asthenopia. R. V., 20–20; L. V., 20–30+. Hypermetropic astigmatism. Correcting glasses. Advice not followed.

Case 110. Mrs. F. R., 1888. Sick-headache after riding; takes Bromide when she thinks the headaches are coming on; cannot sew in evening; one eye turns out occasionally. R. V., 20–30; L. V., 20–40. Myopic astigmatism. Exophoria 5°. Correcting glasses; advised operation if not relieved by glasses. Unknown.

Case 111. Mrs. C. H. M., 1888. Headaches after using her eyes. R. V., 20–30; L. V., 20–30. Myopic astigmatism Correcting glasses. Relieved.

Case 112. Mr. J., 1888. Headache nearly constant since last spring. R. V., 20–30; L. V., 20–30. Hypermetropic astigmatism. Is using glasses which partially corrrect the error. Relieved.

Case 113. Miss L. P., 1888. Has always suffered from pain in eyes and forehead. R. V., 20–20; L. V., 20–20. Hypermetropia. Advised rest. Unknown.

Case 114. Miss K. R., 1888. Severe and nearly constant headache; blepharadenitis and conjunctivitis. R. V., 20–70; L. V., 20–70. Myopic astigmatism. Correcting glasses. Relieved.

Case 115. Gertrude P., 1889. Twelve years old. When 4 years old eyes became crossed. 1887 Dr. Agnew prescribed convex glasses, and strabismus was relieved. In 1887 weaker glasses were prescribed, and eyes became crossed again. When I saw her she had well marked internal strabismus, but there was no diplopia. She suffered from severe headaches. Atropine. R. V., 6–200; L. V., 10–200. Hypermetropia. R., S + 4 V. 20–70; L., S + 2 V. 20–30. Tenotomy of right internal rectus, which corrected the strabismus. Glasses, R., S + 3 D; L., S + 1 D, for constant use. Eyes straightened; headaches relieved.

Case 116. Miss N. G., 1889. Headaches over eyes and back of head; pain about eyes. R. V., 20–30; L. V., 20–30. Hypermetropia; esoph.

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in accom. 6; abduc. 12; adduc. 12. Correcting glasses for H. M. Advised correction of heterophoria. No relief; did not follow advice.

Case 117. Miss A. F., 1889. Constant headache and pain in eyes when she attempts to read. Anæmic; palpitation of heart on slight exercise; choreic movement of shoulders well marked; sleep is troubled; has received a variety of treatment without benefit. R. V., 20–20; L. V., 20–30. Atropine, R, C—0.25 a. 90 V. 20–20 L, S—0.50 V. 20–20. Esoph. 9 in accom. 12; after exercise; homonymous diplopia with red glass. Stevens' op. on left int. rectus; immediate result; esophoria 2°; abduc. 6°; one month later, exoph. 5; in accom. 12; abduc. 4. R. V., 20–20; L. V., 20–20. Stevens' operation on right int. rectus; immediate result; esoph. 0; in accom. 0; abduc. 8; one month later—no choreic movements; no constant headache; is more cheerful and feels that a weight has been lifted from her, but she has a headache about once a week. Discontinued use of glasses altogether; not so short of breath as formerly; has taken no tonic or other medicine; R. V., 20–20+; L. V., 20–20+. Is more ambitious, and can read without pain. Has some dyspepsia and rheumatism in feet, to both of which she is subject. Esophoria 0; in accom. 6; abduc. 7; adduc. 39. June 25—Esoph. 1; in accom. 0; adduc. 32. Still some palpitation of heart; has some headachestill; some days feels perfectly well; has no jerking, ("choreic movement,") less nervous, sleeps well; ordered Blaud's iron pills grs. 8 t. i. d.; ordered electricity for int. rectus. Sept. 12—Took 100 Blaud's pills as ordered; has but little headache; seldom has palpitation; some pain through eyes and forehead. Esoph. 0; in accom. 5; abduc. 6-7; adduc. 44. R. V., 20–20; L., 20–20. Ordered pris. 3° base out for reading; ordered Tab. trit. of iron, arsenic and ignatia, but she could not take them, and they were discontinued after a few doses. Relieved.

Case 118. Miss E. M. A., 1889. Headaches and asthenopia. R. V., 20–30; L. V., 20–40. Hypermetropia and granulated lids. Correcting glasses, and treatment for lids Relieved.

Case 119. Miss McK., 1889. Headaches and asthenopia. R. V., 20–20; L. V., 30–20. Atropine, R V., 20–70; L. V., 20–70. Hypermetropic astigmatism. Correcting glasses. Relieved.

Case 120. Mrs. F. E. S., 1889. Headaches nearly constant; very nervous; exhausted all the time; hysterical. R. V., 20–20; L. V., 20–20. Hypermetropic astigmatism. R., Hyperphoria 1°; esophoria, 4°; in accom. 4°; abduc. 6; adduc. 18. Ordered correcting glasses, without atropine. No relief. Advised to come again; have not seen her since.

Case 121. Mr. J. H., 1889. Frequent headaches and asthenopia. R. V., 20–20; L. V., 20–30. Hypermetropic astigmatism and blepharadenitis. Correcting glasses and yellow oxide ointment. Relieved.

Case 122. Mrs. A. T. W., 1889. Headache after reading. R. V.,

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20–30; L. V., 20–50. Presbyopia and hypermetropic astigmatism. Correcting glasses for reading. Relieved.

Case 123. Mrs. P., 1889. Headaches, confused feeling in head, and is very nervous; uterine trouble. R. V., 10–20; L. V., 20–20. Atropine. R. V., 20–50; L. V., 20–20. Hypermetropia. Correcting glasses for reading. No relief. Ocular muscles should have been strengthened, but treatment was not carried out.

Case 124. Mr. O. R., 1889. Headaches and asthenopia. R. V., 20-20; L. V., 20–20. Hypermetropic astigmatism. Correcting glasses. Relieved.

Case 125. Miss L. H. G., 1889. Headaches all her life; pain located over left eye and running down back of her neck. R. V., 20–20; L. V., 20–20. Presbyopia and hypermetropia. R, hyperphoria, 1—2; exophoria, 5; in. accom. 8; abduc. 12; adduc 36. Correcting glasses for reading. Advised graduated tenotomy. Refused operative interference. No relief.

Case 126. Miss D. C., 1889. Headache and pain in back of her neck. Myopia, for which she is using correcting glasses. Hyperphoria, 0; exophoria 2; exophoria in accom. 4; abduc, 8; adduc, 18. Treatment was prism exercise for ocular muscles, electricity to int. recti, and occasionally the actual cautery to back of her neck. During the time she was hard at work at college. Relieved.

Case 127. Miss G., 1889. Constant headache; asthenopia. R. V., 20–20; L. V., 20–20. Hypermetropic astigmatism; exophoria in accom. 2; abduc. 6; adduc. 10. Correcting glasses. Relieved.

Case 128. Mrs. H. E. W., 1889. Headaches and asthenopia. R. V., 20–20; L. V., 20–20. Emmetropia without atropine. Exoph. 1; in accom. 9; abduc. 6; adduc. 8. Advised prism exercise for ocular muscles. No treatment.

Case 129. Katie McC., 1889. 11 years old; very severe headaches nearly every day; is pale, and evidently in bad health; is a bright, ambitious child; impressed me that she would develop phthisis and die young; examined lungs and found them normal. R V, 20–50; L. V., 10-200. R. C. + 2 at 90 V., 20–30. L., not improved by glasses. Ophthalmoscope shows irregular astigmatism. Correcting glasses; rest from school; cod liver oil, and exercise in the open air. Seven months later saw her again; came for prescription for her glasses which had been lost. Her appearance of good health was in striking contrast with her previous condition Inquiry disclosed the fact that she had not followed my advice as regards rest from work and cod liver oil, and exercise in the open air She had led her class, had studied all Summer, and had taken a portion of one bottle of cod liver oil, and declared she would rather die than take the remainder. She had worn her glasses while at

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work, and had not had a headache excepting when she had gone without them.

Case 130. Mrs. H. R. L., 1889. Headaches and pain in eyes. R. V., 20-20; L. V., 20-20. Atropine. R. V., 20-70; L. V., 20-70. Hypermetropia Correcting glasses for reading only. Relieved.

Case 131. Mr. R. E. W., 1889. Sick-headache from time to time. Asthenopia. R. V., 20-20; L. V., 20-20. Hypermetropic astigmatism. esoph. 2 in accom. 1; abduc. 8; adduc. 18. Prism exercises until adduc. 37, then prescribed correcting glasses for reading. Exoph. 5° still uncorrected. Relieved.

Case 132. Miss B. B. W. Headache nearly constant, pains located in temples and through the eyes. Anæmic; easily put out of breath. R. V., 20-30; L. V., 20-40. Atropine, R. V., 20-20; L. V., 20-20. Comp. myopic astigmatism of low degree. Esophoria 9; in accom. 6; abduc. 6; adduc. 36. Correcting glasses and Blaud's iron. Relieved by the iron. Four months later—Sept. 1889—headache returning; esoph. 4; in accom. 2; abduc. 7; adduc. 20. Anæmia is becoming more marked again; Blaud's iron again prescribed; relieved again. Relapsed in Nov., and is now under treatment for relief of esophoria.

Case 133. Dr. G., 1889. For many years has suffered with severe congestive headaches, and right complete hemianopsia from time to time. Nothing has prevented the recurrence of the attacks, which are steadily becoming more frequent and of longer duration. R. V., 20-20; L. V., 20-20. Hypermetropia and presbyopia; esophoria 4; in accom 8; abduc. 4-5; adduc. 40. Manifest hypermetropia corrected by specs, for constant use. Presbyopia corrected. During 8 months of use of specs, has had 2 or 3 of his congestive headaches. Marked improvement.

Case 134. Cuthbert S., 1889—Feb. 18. 7 years old; complains of constant headache and double vision; very irritable and difficult to manage; his disposition seems to have changed of late; was recently ill with measles. R. V., 20-30; L. V., 20-20. Hypermetropia. Complains of diplopia, which I could not correct, and suspecting fraud, finally succeeded in proving that he did not really see double. Atropine used, with ophthalmoscope; found H. 2 D. Ordered S.+1.50 for each eye, for constant use; no medicine. March 25, 1889—Mother brings him again to-day; he does not complain of headache; disposition is now good; he is not nervous or irritable, in short, he is sound again.

Case 135. Mrs. J. B., 1888. Chronic headache and confused feeling in head. R. V., 20-70; L. V., 20-40. Hypermetropic astigmatism and presbyopia. Correcting glasses for distance and for reading. Relieved.

Case 136. Mrs. M. F. F., 1889. Has always suffered from headaches; pain in occipital region, especially after using her eyes; has had two attacks in which she was nearly unconscious, followed by numbness

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of left arm; both attacks began with a severe headache in the occcipital region. All of her symptoms have been more marked during the past year. Vertigo and diplopia when tired. R. V., 20–20; L V., 20–20. Hypermetropic astigmatism; heterophoria adduction especially weak. Correcting glasses to be used for all near work Relief was partial when she used glasses for reading, sewing, &c., and became complete when she began using the specs constantly.

Case 137. Mrs. E. E. S., 1889. Headache in right side of head. R. V., 20–100; L. V., 20–100. Myopia. Correcting glasses. Unknown.

Case 138. Mr. A. L. D., 1889. Headaches for 12 to 15 years; pain located in occipital region, and about right eye; attacks recur sometimes 3 or 4 times each week, sometimes less frequently. R. V., 20–20; L. V., 20–20. Hypermetropic astigmatism. Correcting glasses. Unknown.

Case 139. Miss C D. M., 1889. Headaches and asthenopia. R. V., 20–20; L. V., 20–20. Hypermetropic astigmatism; exoph. 2; in accom. 3; abduc. 7; adduc. 10. Prisms for near work; refused to wear glasses for error of refraction; electricity for int recti. Relieved of headaches, but some asthenopia remaining after severe use of eyes. Saw her five times only.

Case 140. Mrs. E. T. J., 1889. Headache and pain in eyes for a number of years; very nervous. R V., 20–30; L. V, 20–20. R., mixed astigmatism. L., hypermetropic astigmatism; exoph. 1—2; in accom. 1—8; R, hyperphoria, 1—2–3; abduc. 8—9; adduc. 8—17. Correcting glasses Glasses did not stop the headache. Stevens' operation on right sup. rectus; immediate result. Hyperphoria 0. Nov. 23, 1889—marked improvement since the operation—Sept. 1889. Is not completely relieved yet, however.

Case 141. Miss M. D., 1889. Constant headache. R. V., 20–20; L. V., 20–30. Hypermetropic astigmatism; weak adduction and abduction. Correcting glasses and rest. Partial relief may be attributed to the glasses

Case 142. Mr. W., 1889 Headache and asthenopia. R. V., 20–20; L. V., 20–20. Hypermetropic astigmatism. Correcting glasses. Relieved.

Case 143. Miss C. B. A., 1889. Headaches. R. V., 20–30; L. V., 20–30. Myopic astigmatism. Correcting glasses. Relieved.

Case 144 Mrs. W. A. B., 1889. Headaches, compressed feeling in top of head; pain in back of neck; was insane last winter. R. V., 20–50; L. V., 20–50. Hypermetropia manifest. S.+3 00 for each eye. Correcting glasses. Unknown.

Case 145. Mr. J. B. P, 1889. Sick-headaches, nauseated after reading, and vertigo. R. V., 20–20; L. V., 20–20. Myopic astigmatism. Correcting glasses. Relieved.

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Case 146. Miss L. W., 1889. Frequent headaches, which begin over O. S. R. V., 10–200; L. V., 10–200. Myopia. Correcting glasses Relieved.

Case 147. Miss M. M., 1889. Very severe headaches for years; no relief from a variety of treatment; headaches are congestive and occur 2 or 3 times per week; nearly constant dull feeling in head; vertigo while reading; asthenopia. R. V., 20–20; L. V., 20–20. Relieved.

Case 148. Mrs. E. L. J., 1889. Headaches and pain in back of neck. R. V., 20–20; L. V., 20–20. Conjunctivitis. Would not wear glasses; eye drops and general hygiene for eyes. Unknown.

Case 149. Mr. A. B., 1889. Headaches and asthenopia; is extremely nervous. R. V., 20–20; L. V., 20–20. Atropine. R. V., 20–70; L. V., 20–70. Hypermetropia. Esophoria, 3–4; abduc 4; adduc. 30. Correcting glasses for constant use. Relieved.

Case 150. Mrs. W. S. Sick-headaches during past 4 years. R. V., 20–30; L. V., 10–100. Myopic astigmatism. Correcting glasses which for several reasons have not been used as yet, although the case was first seen some 5 months ago. Unknown.

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NINE CASES OF NEURALGIA TREATED FOR THE RELIEF OF EYE-STRAIN.

Successes	6
Partial success	1
Failures	2
	9

Case 1. Mr. J. P., 1885. Has been troubled for years with excruciating attacks of neuralgic pains through eyes and temples, extending backward through his head. Reading causes pain in both eyes and temples; has found some temporary relief in quinine. Hermatropine, R. V., 20--200; L. V., fingers at 20 feet. R., Hypermetropia. L., comp. hypermetropic astigmatism; presbyopia; insufficiency of left int. rectus, and L. E. amblyopic from disuse. Exercise of L. eye in reading with correcting glasses; massage and electricity for left eye; strychnine by stomach. R. S.+2.75. V., 20--20: L., S.+3, C.+1.75 at 90. V., 20--30, for constant use, also glasses for reading. Relieved, and has remained well to date.

Case 2. Mrs. R. R. L., 1885. Nearly constant and very severe neuralgic pains about left eye; eye sensitive to light. R. V., fingers at 2 feet ext. Strabismus for many years. L. V., 20--30. Hypermetropic astigmatism. Correcting glass for left eye; electricity and medicinal treatment. Treatment of eye without result; electricity gave her some relief; medicine had no effect.

Case 3. Dr. H. C. T., 1888. Frequent attacks of severe supra-orbital neuralgia; obliged to take morphine for the pain; attacks are more frequent after severe mental strain; overworked. R V., 20–20; L. V., 20–20. Comp. hypermetropic astig. in each eye; orthophoria. Correcting glasses for reading. Relieved.

Case 4. Mr. W. G. W., 1888. Headache and supra-orbital neuralgia after severe mental labor; asthenopia. R. V., 20–20; L. V., 20–20. R., Hypermetropio; L., hypermetropic astigmatism. Correcting glasses. Relieved.

Case 5. Mrs. K., 1887. Frequent periodical attacks of neuralgia and sick-headache; sometimes pain begins in stomach and extends to head; sometimes it begins in head and extends to stomach; but always before the attack ends, she has pain in stomach and in head. Has received a variety of medicinal treatment at home, and in Albany and Troy. No relief; gives no special symptoms of dyspepsia; sight blurs

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when she reads. R. V., 20-20; L. V., 20-20. Hypermetropic astigmatism. Correcting glasses for constant use; pepsine, gr.y., after each meal—of which she had doubtless taken ounces. 1888—One year later saw her husband. He reported that she had had only two attacks since she had received her glasses, and that they were due to leaving off the glasses; the relief is perfect.

Case 6. Mr. H. F. P., 1888. Has frequent attacks of right supra-orbital neuralgia; is frequently nauseated by the pain; has had headache all his life; suffers from obstinate constipation; is in poor health. R. V., 20-20; L. V., 20-20. Hypermetropic astigmatism. Correcting glasses for constant use. Relieved at once; took no medicine to correct his bowels, but speedily recovered from his constipation; great improvement in his general health.

Case 7. Mrs. Dr. S., 1888. Intense neuralgic pain about left eye for two months. R. V., 20-40; L.V., 20-30. Hypermetropic astigmatism. Correcting glasses. Relieved at once.

Case 8. Mr. B. B. S., 1889. Severe neuralgia in his head; uncomfortable feelings about his right eye; is over-worked and very nervous; asthenopia. R. V., 20-50; L. V., 20-30. Myopic astig. and presbyopia. Reading specs. No special effect on neuralgia. Prescribed glasses for his asthenopia. He was under treatment by family physician for neuralgia.

Case 9. Mrs. F. E. H., 1889—Feb. 6. Periodical attacks of neuralgic pain in left temple, and about left eye; pain lasts 36 hours, and is attended with nausea; obliged to go to bed; at such times photophobia is well marked; medical treatment has given no relief. R. V., 10-200; L. V., 10-200. Atropine, R. V., 10-205; L. V., 10-200. Comp. myopic astigmatism each eye; presbyopia. R., hyperph. 1°; exoph. 5; in accom. 10; abduc. 9; adduc. 10. Correcting glasses; Stevens' op. left ext. rectus, leaving exoph. 2°. Four days later—R., hyperphoria 1; exoph. 1; in accom. 8; abduc. 8; adduc. 18. Feb. 21—Headache and vertigo. Hyperphoria 0; exoph. 1; in accom. 9; phenacetin grs. 4 q. 1 h.; relief by afternoon. March 21—exoph. 3; in accom. 7; abduc. 8; adduc. 24; sensitive points about left supra-orbital nerve; galvanism A. on forehead and temple, mobile; C.; nape of neck, stabile; also exercise of ocular muscles. April 8—Exoph. in accom. 1—2; abduc. 8; adduc. 49. Discharged much improved; still has attacks of neuralgia, but they are much less frequent, and less severe.

NOTE.—December 18, '89.—Saw patient again. Improvement continues, but is not entirely well; has been compelled to use her eyes excessively. Esop. 1—2. Abd. 6; add. 30. December 27—L., Hyper. 2. Exoph. 3 in accom. 5; abd. 7; add. 36. January 7. 1890—One week ago had a very severe attack of pain and nausea; first attack for six weeks—induced by over exertion. January 9—L., Hyp. 2. Stevens' op. on left sup. rectus, leaving hyperph. 0. January 11—L., Hyper. ½; Esoph. 1; abd. 8.

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SOME OBSERVATIONS FROM A COUNTRY PRACTICE.

DR. W. H. VINCENT, ORWELL, VT.

I have selected a few cases from a general practice which may perhaps be interesting in some particular, if not profitable.

On September 22, 1887, Linus B., age 17, farmer's son, medium build, while indulging in a foot race and being some distance in advance, turned his body slightly to see how near his competitors were, crippled and fell. I was called, and expected to find a fracture in some part of the thigh, this being the location of pain. Finding the femur all right, but the power of flexion gone, I carefully examined the hip and pelvis, finding a fracture of the anterior superior spinous process of the ilium at the attachment of the sartorius muscle—the entire spine being pulled off and attached to the muscle, and separated some one and a half inches from its attachment.

Finding no account of such a fracture in my surgeries, and knowing this muscle to be very important in its action on the pelvis, thigh and leg, the boy was taken to his home and the fracture reduced as near as possible by flexing the thigh upon the body and the leg upon the thigh.

The body was placed in a half recumbent position and the limb held by a strong band extending from the foot and attached to a band about the body, and building up under the knee with pillows. The nurse was cautioned to see that it did not change this position.

I had no trouble in keeping the fracture in place, and in a few days found the bone attached, and the boy made a good recovery, with no deformity. This fracture was caused by muscular exertion, and as far as I know is of rare occurrence.

On Tuesday, March 11, 1885, Mary, a professional nurse, age 22, strong and healthy, while lifting a heavy patient, had the sensation of something giving away in her side. On the following day, March 12th, the usual symptoms of peritonitis developed, with pain in right inguinal and umbilical regions, accompanied with marked tenderness.

On March 13th, at six o'clock A. M., the symptoms had become so alarming that opiates were resorted to. The respiration had then reached fifty per minute and were thoracic and shallow, the limbs flexed and the patient in great distress. Twelve minims of Magendie's solution was injected into the arm with marked relief; the respiration became slower, and in one hour reached 30. At this time another injection of Magendie's was used to control the pain. Soon after the second injection of Magendie's the respiration dropped to 12, and symptoms of opium poisoning soon developed. Every means were resorted to to keep the patient awake.

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As the coma increased the respiration dropped to 4 ; antidotes could no longer be swallowed, and every effort to arouse the patient seemed useless. Preparation for artificial respiration was made, and none too soon, for at 8.30—two hours from time of first injection, and with less than one half grain of morphine in the system—respiration was completely arrested.

The tongue was drawn forward and held in place by forceps, head lowered on a hard mattress, and Silvester's method carried out as near as possible—the arms being extended over the head to expand the chest, and flexed against chest walls to expel the air—repeating this as near eighteen times a minute as we could.

The body was well protected with hot bottles and bags, the limbs rubbed, and small doses of atropia and ammonia injected into the limbs every half hour, and hot coffee by the rectum.

The above treatment was continued until 4 P. M., or for 8½ hours, without change in patient's symptoms ; but during this time the pulse remained strong at 90, and the blood received sufficient oxygen to cause but little disturbance to the venous circulation.

At 4 P. M. the patient would occasionally gasp for breath, and from this time on the respiration gradually increased until artificial means were no longer needed.

At 8 o'clock, while the nurse was attempting to inject some milk by the rectum the patient roused up as from a refreshed sleep, and looked about in surprise. The ice coil was then applied to the bowels, which were much distended, and the temperature carefully watched.

On Thursday, March 14th, the patient was very comfortable ; the inflammation had subsided, and from this on she made a good recovery, being able to sit up in bed on the third day, and to walk about one week from time taken sick. The effects of the morphine seemed to kill the inflammation.

The interesting points in this case were the marked susceptibility of this patient to morphine, noted by the length of time of coma, considering the small amount of morphine used, and the success we had with artificial respiration by supplying sufficient air to the lungs for eight and one-half hours in order to get the effect of antidotes.

Having had considerable experience with chronic and acute skin diseases, and finding them the most obstinate disease I have to treat, perhaps a few observations, accompanied with a report of a case of chronic eczema will not be time wholly lost.

Jessy A., age 17, had been afflicted several years with eczema until it had become chronic. It was hereditary,—the father and the mother having the same disease, and also uncles and aunts—the disease being in the family for years.

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It was of the dry and scaly form. The patient's general health was in good condition, excepting the nervous system, which was greatly shattered by the progress and obstinacy of the disease. The patient had been through the hands of several physicians, and had probably taken most of the remedies recommended in our text-books. Upon a thorough examination I found every organ doing its work well. The disease was general, and involved the whole body; the skin was much thickened, dry, and scaly; the itching was intense, due to the dry scales irritating the nerve filaments. The pulse at times beating 140 per minute, and never below 120, which was due to the nervous prostration. No fever; good appetite, with continued nervous chills, and sleepless nights, for weeks.

The patient not being able to scratch fast enough, at times two or three of the family being obliged to help her, and in the morning the mother would show me a pint dish full of dry scales she had removed during the night from the bed.

The hair all came out, and the scalp was as dry and shiney as if there had never been any there.

I tried to control the nervous system with nerve sedatives; used tonics and blood remedies with no benefit, and finally decided that the local irritation was the cause of all the trouble, and this must be controlled or my patient would be a fit subject for an insane asylum or an undertaker. From this on my treatment was local, with the following results.

I used the soap treatment recommended by Tilbury Fox, and discovered by Hebra. A small quantity of soft soap was well rubbed into the thickened skin by means of a soft flannel,—wetting the latter from time to time to form a lather; when soreness was felt, the rubbing was stopped and the parts wiped dry and covered with a mild ointment to exclude the air—the application of soap and ointment being made twice a day. I noticed at once a cessation of itching, a softening and smoothing of the skin, and a marked subsidence of all the nervous symptoms. Within two weeks the skin was natural and healthy, and my patient cured.

There has been no return; the hair has commenced to fill in, and, although the patient is obliged to wear a wig, will some time have as good a head of hair as ever.

This case only illustrates how simple a remedy may be needed to remove the cause of so obstinate a disease.

I have had several milder cases that have yielded to the same treatment, and consider this well worth a trial in chronic thickening and dry eczema.

Of course, if the liver, kidneys, or blood are at fault they must receive proper treatment. In acute cases I always use internal and local remedies, and the prescription that has served me best has been

R. Sulphate of Magnesia, 1½ oz.; sulphate of Iron, 1 drachm; dil. sulph. acid, 2 drachms; infus. of quassia, 8 oz.

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M. Two to four drachms after meals, with or without small doses of strychnine, and locally some mild, soothing ointment of boracic acid, bismuth or zinc, made up with carbolized deodrolina.

With varicose ulcers of the lower extremity, which heal so slowly, or ulcers of any description in this region, accompanied with capillary congestion of the parts and an unhealthy discharge, my treatment has been to apply a saturated solution of iodoform in balsam of Peru to the raw surface, covering this with a soft piece of linen saturated with bichloride of mercury 1 to 2000, and an empire elastic bandage, recommended in the International Journal of Surgery, May, 1889,—which I find superior to the rubber bandage or elastic stocking—being cooler, easy to apply, and readily washed when soiled. I have found bathing the limb with Pond's Extract will tone up and remove the discoloration due to the congested capillary circulation, and have had no trouble in curing my cases with the above treatment.

In conclusion I wish to give a short report of my obstetrical practice for five years, to show the similarity of one hundred and thirty-eight consecutive confinements.

Have lost no mothers, and only one child. All my cases have been head presentations, with only two occiputs posterior. Have used the forceps seven times. Have had one laceration of the cervex with complete laceration of the perineum, which was successfully operated upon one year after confinement.

Have had four partial lacerations of the perineum, which healed by the application of sutures at time of confinement.

Have never met with a case of placenta prævia or abnormally retained placenta.

Have never had a case of puerperal septicæmia, flooding, or broken breast.

The weight of the babies have ranged from two pounds and ten ounces to fourteen pounds, and although the smallest was a six months baby he was bound to live.

My management has been as follows—I always go prepared for emergencies: Long and short forceps; Fluid Extract ergot; Hypodermic Syringe; Magendie's Solution of Morphine; Liquor Ferri tersulphatis; Needles and sutures; Fountain Syringe; Ether and Chloroform—and always have these where I can lay my hands on them at any moment, with hot and cold water.

If everything is all right and the pains are weak I give quinine in one grain doses every hour, which stimulate uterine contractions. I never allow a woman to lie over six hours with hard pains, especially if there s no progress, and I have never remained with a confinement case over twelve hours.

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After the second stage I always commence ergot and remove the pla centa as soon as possible, following it up with the hand on the fundus of the uterus—using Crede's method.

I never leave the patient until the baby is dressed, and devote my time in seeing that the uterus is held down and not allowed to fill up with blood—the main cause of so many after-pains and flooding.

After the baby is dressed, the mother is sufficiently rested, and womb contracted to receive the binder and soiled clothing may be removed, I have never had occasion to use a vaginal injection, or antiseptics of any form, excepting plenty of soap and water, believing in the idea that "cleanliness is next to Godliness."

I always use antipyrine for a few days, as I think it relieves the after-pains and checks the rush of milk, which is the cause of so many broken breasts.

Physicians, as a rule, in this country, far from home perhaps, are not prepared for emergencies; but emergencies known to be probable should always be anticipated, and although my cases have been of such a nature as not to oblige me to resort to my obstetrical bag very often, still, by adhering to these precautions, I may in my next confinement case be able to save the life of a mother or child.

Dr. Drake:—As I stated in my introduction, I do not intend to enter into discussions; but it does seem to me that these practical suggestions that have been thrown out are worthy of more consideration than they are receiving. Perhaps some points will be asked and some will be proven. One question comes up: I would like to get the practice of physicians regarding the use of ergot. Whether it is their practice to use it as a rule, or in emergencies?

Dr. Jackson:—I only speak for one. It is very seldom in the last 10 years that I have seen cases where I thought Ergot was necessary in obstetrical practice. I believed, as many of you have done, no doubt, that after the child was brought into the world, fluid extract of Ergot should be given to assist in the removal of the placenta and the prevention of hemorrhage, and for years this was an established practice with me. I began to ask myself if it was a necessity, and if nature would not attend to its natural duties, as I found in many cases it was capable of doing. In the last 10 years I have had very few occasions to make use of Ergot at any time in obstetrical practice.

Dr. S. S. Clark:—Dr. Jackson has referred to the use of Ergot to prevent hemorrhage, or to produce contraction of the uterus. I think my experience has been varied somewhat in the use of Ergot.

When I was in the Medical School, we were taught to use Ergot to produce contractions in cases of inertia of the uterus. Sometimes a woman may be in labor for several hours, and her labor be prolonged,

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and then Ergot was to be used. For several years, it was my experience to give a dose of Ergot under these circumstances, and I felt just as sure of getting good uterine contractions, and those continuous until the child was expelled. For the last 15 years, I am sure I have not seen a single case where the use of Ergot was followed by these conditions. Either the quality of the Ergot is different, or there is some other cause, but I have not been able to get uterine contractions in a single instance, when I was before sure of getting them from this treatment. I used the wine of Ergot. I also used an infusion of the berry itself, and got contractions in a few minutes; but for the last fifteen years I have not seen any such results, although I have given Ergot a good many times to act more upon the nervous system. I have given it more because it is recommended. It seems more likely to be an inert remedy now, than anything else. It may be owing to a change of climate, or the conditions in culling it. I have had Parke, Davis & Co.'s Squibb's, Wyeth's and various other firms, and really think that it is a remedy that is about useless. I have tried it of late years in some cases of diabetes. I think Tyson laid it down as being the best remedy in this disease. I cannot say from my experience that it is worth much. It is given to produce an astringent effect upon the kidneys, operating through the nervous system and spinal cord.

I would give more for other remedies, and would place Opium or Codeia much higher.

Dr. Jackson :—Dr. Clark's suggestion in regard to inertia of the uterus calls out another practical suggestion which I would like to offer. When there is inertia of the uterus, if you will give your patient 8 grains of Quinia, you will be pleased with the results. It is an afternoon of practical suggestions, as seen by the papers which have been read; and I wish to offer my thanks at least, to Dr. Woodward for the hints he has given us, also to Dr. Vincent, for the very practical paper he has presented. I am sure that if you have a case of inertia, you will think of the Quinia if you do not of the suggestion.

Dr. Wilder :—I think the experience of nearly all physicians as regards Ergot is, that they learn to depend less upon it as they go on in practice. It was my custom to rely a good deal upon Ergot. I was taught that it was quite necessary to control post-partum hemorrhage, and to use it before the delivery of the after birth. I used to be troubled with the delivery of the after birth. I soon became convinced that when I used Ergot, I had an irregular spasmodic contraction of the uterus that tended to delay the expulsion of the placenta. Perhaps not from the advice of others, but by some means or other, I gradually came to depend little upon Ergot and used it less. When I wanted to use any remedy to produce a steady, natural contraction, I used Quinia. I know it has been more successful in my hands, and I have had no difficulty

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in delivering the after-birth. In fact, it has been a good many years now, since I have had any trouble. I did have serious trouble at first, and was obliged to introduce my hand into the uterus and overcome this spasmodic action of the uterus. I very rarely use Ergot now, and I am satisfied that my results are better. I cannot say that Ergot has no effect. It seems to me that it does produce contraction, but not a kind that we really desire.

Dr. Brown :—This is a sort of experience meeting, and a very practical one. I would like to give expression to my own experience in regard to the treatment with some cases. My own practice for the first 15 years of professional life was to use Ergot, just as Dr. Wilder and Dr. Jackson and others have said. For the last ten years, I have used a little simple remedy in place of it for the same purpose : nothing more than the fluid extract of ginger. This came to be my favorite prescription. I never tried quinia, but have always accomplished exactly the same results with simply the fluid extract of ginger, common Jamaica Ginger. I have become so thoroughly attached to it, that I always carry it with me whenever I attend obstetric cases. I certainly to-day would rely thoroughly upon the fluid extract of ginger, for producing these uterine contractions, or for use when there was difficulty in expelling the after-birth, more than any remedy I know of. The effect of the ginger is almost instantaneous. Its effect is seen the moment it comes in contact with the stomach. The dose is from a dram downwards. The contractions are very well defined, and are felt at once. The effect is much better than any I have ever got with ergot, simple as this remedy is.

Dr. Strobell :—As this is a perfectly natural process, I think that interference before the 12th hour, in normal labor, is unwarranted. I think nature is equal to the task before her, and I think the exhibition of any remedy is unwarranted. In a case of inertia, I usually use five grains of quinia, and exhibit Ergot only when there are indications of flooding, and the uterus does not contract sufficiently. I always wait one hour before assisting the expulsion of the placenta. I think my results will compare favorably with what I have heard to-day. I always cleanse antiseptically after the labor. I do not trust that to any one. I wash the parts myself. Very few patients will object to that, when they understand you are doing it in their interest. Furthermore, I always use a hot water antiseptic injection immediately after. In the week following the labor, I use an injection of hot water three times a day. The patient always expresses relief. It does good. I have had one case of pure puerperal septicæmia, but it was due to a brother practitioner, and due to his want of cleanliness. I observed some time after he had made the examination, that his hands were very filthy, to say the least.

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Dr. Goodall :—I thought I would be a little quiet the rest of the day, but I would like to ask how soon, after giving the quinia, the effect is noticed ?

Dr. Jackson :—Very soon. In from 10 to 15 or 20 minutes.

Dr. Goodall :—Not so soon as Dr. Brown speaks of in reference to ginger ?

Dr. Jackson :—Quinia is accompanied with water. Sometimes the water is given without the quinia. I have felt sometimes that I get a very good effect by simply giving a good drink of cold water. I think I get a response very promptly.

Dr. Strobell :—I should get an effect in ten minutes, and administer quinia in wafer form. The wafer is dipped in water, and the quinia just covered over. The patient tastes nothing.

Dr. Goodall :—On one occasion, I was attending a lady in labor where there was a great deal of inertia. There were no good, strong labor pains. The pains were very infrequent, and very feeble. The uterus was well dilated, and the parts were all in an excellent condition for speedy termination of labor. I have been in the habit of guessing out quinia and have done so for years, and I think I guess very closely. I turn out what I consider a good honest 4 grains. I have heard one gentleman say that he gave three grains, and another five. I did not want to confess that I had given four grains until some one else had said something about an amount. I gave four grains as near as I could give. I do not recollect how I gave it, but probably with water. Almost instantly, as I remember, I should say within five minutes, and I think within three, I got a violent contraction, a terrific contraction, that ripped the perineum, and out came the baby.

A member :—Do you think that contraction was produced by the quinia ?

Dr. Goodall :—It may have been, and it may not. It was a coincidence certainly, and I give it for what it is worth.

Dr. Prime :—I was taught to use ergot to produce uterine contractions, and have used it in my practice for nearly eleven years, and usually have had good results. I do not like having it put down entirely. Perhaps I have just the same feeling in regard to the matter that Dr. Jackson and others had in their first years of practice. In the occasion of the post-partum hemorrhage I use pressure, cold cloths, and in extreme cases, I have used ice inside the uterus, and know I have saved one life by it; and I certainly have had very good results in that way. It seems to me that ergot will produce contraction of the uterus and arrest the flow. Sometimes I have noticed that the contractions have not been regular, but at other times they have. Until I am positive that it is not good for anything, I shall have to stick up for ergot.

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Dr. Wilder :—It seems to me that it is better for us to have as little interference as possible in these cases, and trust to nature. Nature is adequate in many of these cases. I believe interference is attended with positive injury, as has been said. It is unnecessary to meddle with the ordinary case of labor until several hours have passed. I believe in using instruments just as rarely as possible. A gentleman says he had one case of ruptured perineum operated on one year after. I understood him to say that he had four other cases. I have been in practice 18 years, not perhaps as extensively in that line as some others, but as much so as physicians in towns of the size of the one in which I am located. It has never been my fortune to witness rupture of the perineum or of the cervix. I have had no case, I think, come under my observation. I cannot tell you in how few instances I have used forceps Not as many as the gentleman mentioned, I presume, certainly not more. Nature sometimes seems to be in haste. In that case it is our duty to support the perineum. If you take the work out of the hands of nature you incur great risk of rupture of the perineum. I do not know but that my experience is different from that of others of this Society, but perhaps our women are a little more elastic. In my practice, gentlemen, I aim to do no harm, if I am not sure I can do some good. That is the plan we should work upon in attending cases of confinement. I admit, of course, that there are cases that demand instrumental delivery.

Dr. Sutton :—You all inquire something about the practice of antiseptic injections. I have heard that mentioned several times to-day. There has been talk about rinsing out the vagina, about this antiseptic injection once or twice a day as the case may be. I am in something of a fix to reconcile my own practice with what I am rather inclined to think is the practice here to-day. I have had something over 600 cases, and never have used antiseptic injections, except in one or two cases, and I have never had a case of puerperal septicæmia or puerperal fever. Now is it luck that has aided me in this great neglect? I would like the sentiment of the members here who are confident as to what their practice is. I do not like to go along in this kind of blind way any longer.

Dr. Cilley :—During a practice of fifteen years, I have never used antiseptic injections, I think, in a single case, and have never lost one. I have met with rupture of the perineum but once. I have brought a specimen that I want to show the Society, and perhaps this is as good a time as any. This is what I call the heart of a child that was born last May, and it was outside the abdomen in that manner. The heart was right above the umbilical cord. There was no covering over the heart. This child lived four days lacking two hours, and seemed to be perfect in every other respect. The first thing I noticed was this tumor. I had the child dressed, and it lived, as I said, four days lacking two hours.

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How to account for this occurrence I do not know, but the woman tells this story. When she was somewhere about three months along, her husband shot a dog, the charge entering the dog between the fore legs, and the heart came out through the gunshot wound. The woman did not see the dog, but was told all the circumstances. For several nights afterwards, she would wake up and see the dog with his heart outside.

Dr. Strobell :—In regard to antiseptic injections, it is not always to prevent puerperal septicæmia, as I understand it, that we give antiseptic injections. I think it lessens the length of the lying-in period, or the period that is taken for the system to recover from the prostration incident to the stage through which it has passed. I think it shortens this period materially, and prevents puerperal septicæmia. Another point I wish to touch on, is with reference to this question of giving quinia. If as the Dr. said, the effects that he received were almost instantaneous from the four grains, it follows that even ½ grain would do the same amount of work; for certainly the system cannot absorb four grains of quinia within a minute. It may take one-half hour. It may take longer. I give five grains for a continuous effect, and then repeat it within fifteen minutes. If in two hours or so, there is still inertia, I repeat it. It follows then, if that is the case, ½ grain will do the same amount of work that the larger doses will.

Dr. Sutton :—My object in speaking of antiseptic injections was not merely to tell of my practice, but with the view of expressing my opinion based on my practice, which is, that they are as a rule injurious, and convey infection, and are sometimes the cause of puerperal fever.

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INCIDENTS OF THE MENOPAUSE.

Dr. C. F. Branch, Newport, Vt.

There is probably no branch of our study, as medical men, which affords so meagre literature, as the one of which I am expected to speak. With an acknowledged incompetency—yet with a firm desire to learn more—I would discuss the topic to a greater length than can be done at this meeting. Though I cannot bring long years of experience, or present an array of statistics from actual observation, yet I can tell, in a few words, all that I know about the matter.

The vast amount of literature upon Gynæcology or Obstetrics, has thus far done but comparatively little to help us along, satisfactorily, in this one line of practice, which we meet with at our homes almost every day. While it is true, that the French have attempted to bring the study of the sexual organs of woman within range of the general laws of pathology, Velpeau undertook to teach the frequency and importance of uterine inflammations, malformations and displacements as sufficient to explain most uterine diseases. As late as 1844 Dr. Bennet of England, declared the truth of the teachings of the French schools. Later, Simpson undertook the treatment of uterine displacements by the use of pessaries—and modern, mature, pathologists still hope for a pessary which will support and rectify the freaks of this much abused organ, the uterus—without damaging it.

In our day every gynæcologist, young or old, with a reputation, or without, has a pet pessary or harness of his own, which but few of us care to experiment with. You, who to-day sit among us, as the fathers of the profession, will recollect of years gone by, when Simpson taught the slitting of the cervix, as a cure for the diseases of the menopause, and in some cases as a cure, in adult life. He also wrote favorably of its advantages in the treatment of sterility. Later, Sims followed the teachings of Simpson, and advocated its adoption as being almost a radical cure for a majority of the diseases of women. But time, and methinks experience, gradually disabused the leaders of the profession of the idea that making a section of an irritated cervix would work a cure to this complex organ; and then the younger gynæcologists went about sewing up these slits which previous teachers had advised. Then followed miraculous results from ovariotomy, which operation for nearly half a century had been considered reckless, and fraught with a multitude of dangers.

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To-day it is one of the fashions to emasculate woman for a variety of reasons. And it is not improbable that in the near future, with the increasing advent of woman into the medical profession, that these female physicians will introduce a fashion of emasculating man for the relief of numerous ills which we males may be suffering from. It is not improbable that in such an event the bachelors, particularly, will be attended to, as these organs can be of no use to them. Besides, their removal will do away with temptation seen and unseen, and lessen their liability to diseases peculiar to their sex. The difference in the methods and results being that while women hastens to yield her ovaries, our sex dispose to cling to their testicles.

The terms climacteric and menopause, which will appear frequently in the remaining pages of this paper, are understood to mean a certain period of time in the life of a woman when irregularities appear in her menstruations, which are usually apt to precede the appearance of the final menstruation. The duration of this time among the sex is found to be varied. Authors disagree about the importance of this period. Tissot, Meissner, Fothergill, Clark, Meigs and Bedford disagree as to the pathology and results of the menopause.

Dr. Mundes is of the opinion "that besides the consequent disorders at this period—there are undoubtedly many forms of severe nervous disorders, many types of paralysis, frequently permanent, as well as a multitude of nervous diseases which present no particular lesion." Lefranc and Dusourd adopted the popular belief of the dangers of the menopause.

Sir John Tilt says, "matrimony, pregnancy, parturition and lactation are like critical periods, curing some complaints—giving greater activity to others. And when after having lasted thirty-two years the action of the reproductive organs is being withdrawn from the system, there arises a series of beautifully critical movements, the object of which is to endow a healthy woman with a greater degree of strength than she had previously enjoyed." "But," said he, "if the seeds of destruction have been slumbering for years within, the change of life will give them increased activity."

Thus Dionis of old, and Tanchon in our times, have said that the greatest proportion of cancerous affections are found at this period. And Velpeau declares, that a like rule applies with regard to cancers of the breasts.

I am aware that much might be said relating to this physiological and anatomical change; of the difficulties of correct diagnosis during or after the menopause. From experience I could recite instances of a wrong diagnosis at this period, of a protracted case of chlorosis mistaken for the menopause, of pelvic cellulitis, and of granular cervicitis, and of uterine polypi mistaken for the menopause; also of fibrous tumor during the menopause, mistaken for pregnancy. For hours one could rehearse the

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multiform types of nervous irritability, headaches, dyspepsias, constipation, follicular inflammation of the vulva, intercostal neuralgias, eczemas, etc.

Sir Lawson Tait gives statistics from a careful observation of 500 women during the menopause in which 406 suffered from diseases of the ganglionic system, and 263 had some type of disease of the reproductive organs.

I have in mind one case, of a sensible and somewhat refined lady, whose family record is free from the taint of insanity, who had a profuse menorrhagia on her wedding night, with considerable uterine disturbance for weeks, who was out of her mind for more than a year. And in going over numerous cases I have wondered without satisfactory conclusions, *why* some women suffer so much, and others so little at this period. *Is it true*, that it does not so much depend upon the strength enjoyed by the system which *is* constitution? Or of the visible predominance of any one set of organs over the other, which is temperament? Does it depend upon the menopause occurring early or later? Or in women who are single or married, be they in the mansion, or in log huts among our hills? Does it depend upon a peculiar susceptibility of the nervous system—a condition as yet unrevealed to the microscope, and evident only from the manner in which it responds to the reproductive and all other stimuli? Who will solve this perplexing problem?

Dr. Thomas says, "that it is a very serious thing for a spinster to marry at about fifty, particularly if she be anxious, nervous and excitable." *He* asks, "will she bear well the new life? Has she the power to adapt herself to new and enlarged circumstances? Will happiness be wrecked in the venture?" These are questions to be seriously pondered, for it seems to me these questions concern a large number of our American women.

From a statistical report in England in 1861, 482 spinsters and 2476 widows married, whose ages ranged from forty-five to fifty-five years. Of these 2958 women, some married for love, others to better themselves, or, to show that they *could* have married before if they had cared to—while others, like the beseiged fortress, surrendered at last for the sake of peace.

I have intimated that the system is remodelled at the menopause. If it were not so, why the increased consumption of carbon by the lungs? Why the increased amount of urinary deposits? Why increased perspiration? Why abundant mucous flows? Why vicarious hemorrhages? Why obesity? If nature bleeds in different ways nearly one-half of these subjects, it is evidence of a spontaneous effort to relieve the system. May *we* profit by instituting its imitation!

Again, if nature endeavors to relieve the system by allowing an ex-

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cess of the lithates and phosphates to be excreted, does it point to a use of the alkalies?

The deductions, to be brief, are, that there are to be considered a previous liability to pelvic or uterine disease. Temperament is an important factor to be brought forth for consideration. The lymphatic temperaments usually derive marked benefit at the menopause. The sanguine temperaments are most liable to plethora, and therefore to floodings, or other hemorrhages, and as a rule, I think, are most amenable to treatment. The bilious temperaments are most apt to develop the gastro-intestinal types of diseases, and from this type most often occurs types of insanity. The nervous temperaments suffer most of all, and are the least amenable to treatment, seldom recovering perfect health, unless they gain in flesh, and then, not always.

Of treatment what shall I say, when all the world in medicine is at such straits for specifics? Disallowing the term, and aware of the fact that what is considered good treatment in New York, is criticized in Boston, doubted in London, ridiculed in Vienna and sneered at in Paris, where may the plan of successful treatment find stability? Generalizing, however, regardless of opinion or censure, you will find, gentlemen, that an intelligent use of sedatives of practical value in about half of your cases, which you may have under observation; that pseudo-narcotism, the dorsal pain, the headache, that peculiar hypogastric distress, as well as the minor forms of hysteria, will *all* derive benefit from an intelligent sedative medication. I know that local blood letting is of value in many cases, its abuse, to the contrary notwithstanding. Alkalies and diuretics are frequently of great benefit. These may be prescribed in the form of some suitable bottled water, as Vichy, Epsom or Lithia. Tonics are often needed, but I am unable to class them in the order of their importance—since the subjects may differ—but Strychnia, Nux, and Fowler's Solution, have given me much satisfaction; and I have never felt that their use did positive harm, even in some cases where I was satisfied that they did no good.

Baths are highly useful, especially the *full sitz bath*. By this, I mean, a bath which shall take in *comfortably* nearly one-half the body. Much benefit results from not the bath merely, but the *important* feature being your ability to control its temperature, thus realizing a double effect from it.

Very much also depends upon a proper observance of the hygiene of the reproductive organs; hygiene of the digestive system and of the skin; also a proper hygiene of both the muscular and nervous system; while much—*very much*—may be accomplished by a proper observance of both the mental and moral hygiene.

In conclusion, allow me to repeat a few words by Dr. Darby, whose fine impulse shall help cut short this difficult problem. "Alas! That

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we are yet so ignorant that there are many things about this house of ours, which, seeing them weaken, we know not how to strengthen. About the brick and mortar, the frame and the rafters, we are not unlearned: but within are many complexities, many chinks and crannies, full in themselves of secondary chinks and crannies, and *these* so small, so deep, so recessed, that it happens every day that the destroyer settles himself in some place so obscure, that while *he kills*, he laughs at defiance."

PREVENTIVE MEDICINE.

By W. R. Prime, M. D., Richford, Vt.

I do not propose in this paper to embrace all of this extensive and important subject, but will merely call attention to a few facts, which seem to me to show the dangers to which people who reside in this country are subjected by exposure to infectious diseases through failure to protect themselves to the extent they might by proper use of the means at our disposal.

In all enlightened countries, sanitary officials, under a central government or of States or municipalities, are charged with duties for the protection of the public against infectious diseases; and general measures of sanitary police, isolation of the sick, and the use of disinfectants are usually recognized as the best means to be employed for the purpose.

To further these plans, could public opinion originate from a true knowledge of sanitary matters, and rest on a more scientific basis, or could people be influenced in these matters by the educated physician only, much trouble would be avoided, and contagious diseases would be comparatively rare. As it is, too many of our best and most influential people, who are undoubtedly well posted in business, social, or political matters, have failed to recognize the value of the results of ages of experimental scientific work, of which our general practitioner now has the benefit. The public too often listen to the opinion of some Thomsonian, root, or Indian "Doctor," besides a long list of unclassified and unwashed, who are called into existence by the necessities of an unrelenting poverty, or the promptings of a greedy avarice.

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These charlatans subsist by extracting money from all classes, by the use of false pretensions concerning their skill, experience, and general or special ability, and oppose or agree with regulars as may suit the minds of the people to whom they look for patronage. They artfully misrepresent our motives whenever we make suggestions which involve expense, or inconvenience; and in regard to isolating cases of infectious diseases, they will knowingly remark that they never heard of such nonsense before, and ask if such diseases are any worse than they always were, with a sneer at alarm of *contagion*. This pleases a certain class of public spirited citizens who know the weight of economy in public matters, and seizing upon every opportunity to gain public favor, follow up this plan, and utilize the same argument, quoting some noted quack who could tell what ailed the patient as soon as he saw him, and that these educated fools now-a-days should not be allowed to shut people up in their houses when they depend on their labor for their families' daily food. These arguments by such people, to a great extent, prevent preparations in times of health, for diseases which may visit us in the form of a scourge, to bring suffering and death to our friends, and damage the business of a town to an extent that would far exceed the demands of scientific preventive measures.

I will now cite a case which occurred in my own practice during an epidemic of diphtheria. In a family of eleven, the mother, pregnant, the father managing a large farm and depending wholly on his sons for help. One of the children is taken sick with diphtheria, which I report to the health officer, who calls, placards the house, talks with the family, inspects cellar, etc. There are but three rooms in the house suitable for invalids. Before I get through with them, they have eight sick. Two die, one of which died in the night and was buried, according to the health officer's orders, "out beyond the barn," as the father told me with tears in his eyes, when I visited them the next morning. The mother becomes nearly exhausted from fatigue, and complains bitterly because they are not allowed to leave the premises. She says that they must have help, but nobody will come. A step-mother of the woman, at last comes, is obliged to sleep on a table, and eat when she can and what she can get. When I enter the house and hear the snores, and gurglings from many putrid throats, and smell the odors from them, I wonder how much of their medicine they get, and how the value of my disinfectants and deodorizers is to be demonstrated, also if there is no better means for preventing the spread of disease. This case is not an exceptional one. The family had property, but they did not have the privilege of using it, except perhaps, by offering an exorbitant price to some inexperienced person who would dare come to them at his own price. I carried food and clothing from some of the village people, and in time they recovered—except two. I notified the health officer of the termination of the

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cases, and was told afterward that the house had been thoroughly disinfected, but somehow, the family lived in the house during the time, and after a few weeks a daughter returned to live with them, and had diphtheria.

It does not seem right that we should leave the matter of preventive medicine so much in the hands of poorly paid health officers, but consider it the work of every physician, and the more suggestions we get, the better will be the results.

When called to a case which shows symptoms of contagious disease, and especially, during an epidemic of the disease suspected, an upper room should be prepared to keep the patient in until the true character of the disease has developed. This I consider important, but in doing so, we will meet a few obstacles. For example, it is somewhat depressing to a physician to admit that he has failed to make a diagnosis. The patient and friends usually object to being put to much trouble for a seemingly uncertain purpose, and the neighbors will pass uncomplimentary remarks, because *such practice* has not been customary.

A suitable hospital in every town, would be a blessing, but if there is none, endeavor to keep the patient isolated at home for the time, and in case the disease develops, notify the health officer, whom you should assist in the general plan of isolation and disinfection. This involves much trouble and expense to somebody, as it requires something more than giving orders and directions, for these in many instances amount to little, and I may say here, that this is a weak point in our present system. We may give orders to be followed, but how are we to know that they have been obeyed.

I think, if it were possible to have qualified nurses in constant attendance, (at the town's expense if necessary,) the danger of spread of contagion would be much less. These nurses would report to the attending physician any failure on the part of patients or their friends, in following directions or obeying orders. The nurses should receive from the physician, minute instruction for the care of the disease under treatment, and have a general knowledge of the sources and dangers of the infection, with a view of perfecting the plan of isolation. They should understand that infectious diseases are contracted by contact with the sick through the medium of infected articles, or by exposure to infected localities, and that these sources of infection must be avoided as much as possible.

The physician, nurse, parents, wife or husband, should not be driven away by pestilence, of course, as they are valuable assistants, but the nurse in charge must see that the particulars with regard to isolation are adhered to, as people who do not understand the sources, virulence and peculiarities of disease germs, fail to heed ordinary warnings as given by the physician; and even by those who *do* heed them, they may be

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easily neglected unless it be kept in mind, that everything that enters the room of one sick with contagious disease, must remain there until measures are taken to disinfect them. As the contagion of some of these diseases may be carried in the clothing or hair, precaution must be taken by any one leaving the room

The physician should wear an outside protection to his clothing, when in the room, and must not sit down in the room, or touch the patient more than necessary. He should hold his breath when examining throats, and if the patient coughs, keep out of the way of the breath, as particles of infection may be thrown from the throat upon him. Domestic animals may carry contagion. In sweeping the room, I would suggest the use of damp, carbolized saw-dust to avoid the danger of spreading into other rooms dried particles of infectious material contained in the dust from the floor.

Patients should spit only on rags, which should be burned, or if spit-cups are used, they should contain a strong disinfectant solution. All excrement from the patient should be disinfected and buried. Washings should be disinfected, also all books, papers, dishes, children's playthings, brooms, brushes, clothing, bedding, and in fact, every surface which has been exposed to the atmosphere of the room used for patients with infectious diseases. In diseases in which the infectious agent is given off from all parts of the body, occasional ablutions of olive oil will prevent the spread of contagion by desquamation.

Other members of the family, and all inmates of the house who might have been exposed, should be kept at home, and watched for the early symptoms of the disease until the period of incubation is passed.

It should not surprise us if many of these precautions seem unreasonable to ignorant people, and we will often meet with opposition among the better classes, where we would expect better judgment and more respect for the opinions of our profession. We, however, should not resent it, for the first passengers over a new road must expect a jolting.

It will be necessary to explain to the people in a manner to suit their intellects, the theory which demands these measures, and expect to meet with trying ridicule, but if all physicians would endeavor to strictly follow the plan, the public would soon find it necessary to follow directions, and consider our demands of more importance; and while others who have the opportunity, are trying to develop practical theories by means of which the human system may be rendered insusceptible to contagious diseases, we in our sphere of usefulness, may be contributing our share to preventive medicine by devising means for the successful application of our present knowledge, to the requirements of fellow beings in our own localities.

If our predecessors had known the value, and persevered in the

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practice of even the few suggestions I have brought to your notice, they would have saved more lives than they ever did with their drugs, and this remark will apply to the present generation of doctors as well.

The improper use, or neglect, of the general adoption of a good practice, is proof to me, that there is a lack of knowledge, either of the theory or the means of applying it practically; and that the practice of preventive medicine is sadly neglected by many of our physicians to-day, I know to be a fact.

Not only this, but I have known members of our Society even, who professed better things, to not only neglect proper precautions, but to put little obstacles in the way of others who were trying to do right.

We sometimes forget, in our own active competition, to have charity for other doctors who may have thought best in some case to isolate a patient, because his symptoms simulate those of some contagious disease, and we perhaps may offer some cutting, sarcastic remark, with our opinion of the "useless practice," just to gratify a jealous feeling which should not be humored. This is encouraging ridicule which should, and probably would, reflect upon our own practice when similarly perplexed, and desiring to do our duty. We are all at times uncertain in our diagnosis of disease, which may be complicated with other troubles, and it would be much better never to encourage a neighbor to scoff at your competitors' diagnosis, but always encourage respect for your profession.

It is too much the practice for opposing physicians, as well as people of other professions, to hold up the stumblings of medicine to the public gaze, and invoke ridicule and censure; but if the faults and defects of the public officers—if the deficiencies and errors of the other departments of professional labor, were sifted with as invidious and jealous an activity, there would be few left to smile without wincing at their own uncovered sores.

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ACUTE INFLAMMATION OF THE MIDDLE EAR.

By J. N. Jenne, M. D., St. Albans, Vt.

Mr. President and Gentlemen:—

In calling the attention of the Society to this disease, I do so, not with the expectation of imparting new facts or information concerning it, but with a hope that a healthful discussion and renewed interest may be aroused in a subject which from indifference on the part of the profession and ignorance on the part of parents and guardians has led to many serious results.

Most cases of acute inflammation of the middle ear will recover uninfluenced by medical treatment, without doing appreciable damage to the affected ear, but a small number, however, leave behind them as legacies, a chronic, purulent and offensive discharge, diseases of adjacent organs, which will in a few instances destroy life, after months perhaps, by involving the meninges or the brain.

This need not be so; there is scarcely a disease in the whole category which responds more promptly or surely to well directed treatment than acute catarrhal and purulent inflammation of the middle ear, if seen early.

It is then, plainly the duty of the physician to teach the public that there is but one safe course to pursue in all these cases, and that is to consult a physician when threatening symptoms arise, and see to it that he is not guilty of the charge of neglect; these cases, with very few exceptions, should recover completely under proper management.

Causes.—Under the head of causes may be mentioned exposure to cold and wet, acute or chronic pharyngeal and nasal catarrh, allowing cold water to run into the ear, the nasal douche, constitutional diseases, such as scarlatina, measles, small pox and syphilis. It may be said the disease originates in the fauceal end of the Eustachean tube, rarely in the external auditory canal.

Symptoms.—The familiar picture of ear-ache in childhood, pain, tinnitus, crackling noises in the affected ear, unpleasant resonance of one's own voice, impairment of the hearing, redness, swelling and bulging outward of the membrana tympani, catarrh of the pharynx, fever, and in some instances, delirium.

If pus form within the tympanum, another symptom usually presents itself, namely, a bleb or sac containing a colorless blood-stained serum

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appearing in the vicinity of the short process of the malleus or in Shrapnell's membrane. It may form at any portion of the periphery of the membrana tympani, but is usually found at the point indicated; it is caused by the effusion of serum from the over-distended blood-vessels at this point, and varies greatly in size. It is usually the size of a pin head, and is tolerably constant in the variety of acute inflammation of the middle ear which terminates by ulceration and perforation of the drum membrane. It is seen occasionally in the simpler forms of the disease. It is at this period of the disease, or a little later, that a slight moisture will be noticed in the external auditory canal, an exudation from the inflamed membrane; the dermoid layer of this membrane is macerated from the presence of this moisture, giving it a whitish or opaque appearance, well calculated to mislead one into thinking he is looking at a normal, or at least uninflamed membrane. With a probe, armed with a little cotton, one can easily satisfy himself that beneath this whitish substance the membrane is intensely inflamed; but it is not possible in most instances to determine whether the inflammation will terminate by resolution and absorption of the effused mucus or serum within the tympanum, or that pus may not form and perforation occur.

Perforation occurs, of course, from the pressure of the fluid within the tympanum and from necrotic effect of the inflammatory stasis in the vessels of the drum membrane, and is usually attended by relief from the more active symptoms, pain, fever or delirium, if present, unless it is already complicated by mastoid or meningeal mischief.

The pain is usually intense, beating or puffing in character, and occasionally it is intermittent. The hearing may not be greatly disturbed during the first twenty-four or forty-eight hours, it may, in fact, be more acute than normal during the stage of pain. Bulging outward of the membrane usually occurs during the first two or three days, but may not be noticed until several days have elapsed.

The two main divisions of the acute disease of the middle ear, therefore, present the same train of symptoms until the pressure of the accumulated fluids within the tympanum reaches a certain point when rupture takes place and the distinguishing features of the purulent variety manifest themselves.

Diagnosis.—Enough already has been said under the head of symptomatlogy to render it unnecessary to pursue the matter further here. Acute inflammation of the middle ear is easily recognized; whether it is of the purulent or catarrhal variety, it matters little, so far as treatment is concerned, in the early stage.

Prognosis.—The large majority of the cases of acute diseases of the tympanic cavity recover spontaneously without perceptible disturbance of the general health or impairment of hearing, but in a small minority of instances in the purulent type of the disease, it produces serious damage.

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It may impair or destroy the hearing of the affected ear, inflict a life-long purulent discharge upon the sufferer, or, in a few instances, terminate fatally by meningitis or abscess of the brain.

Treatment.—The treatment of the acute catarrhal and purulent varieties of the disease until perforation has occurred, or paracentesis done, is practically the same, and should be varied with the severity of the attack.

If there is severe pain and considerable constitutional reaction it should be prompt, anti-phlogistics and sedatives should be administered. Leeches should be applied to the tragus or to the mastoid process. Warm water with a little laudanum added poured into the ear, and allowed to remain for a minute or two, will often give relief. The warm douche continued for several minutes during each hour. Blowing tobacco smoke into, and steaming the ear have given ease from pain. Poultices should be rarely used, only when other means of relief have failed; they are dangerous to the integrity of the drum membrane. Oils should never be used either in the acute or chronic inflammations of the ear.

Paracentesis should be done when there is bulging of the membrane, except in the mild attack when absorption of the effused mucus or serum may be hoped for. The incised opening heals much more readily than the perforation by ulceration.

Inflations by Politzer's or Valsalvas' methods should be practiced daily after the acute symptoms have subsided, to ventilate the tympanum and blow out any remaining pus or mucus, and also to prevent adhesions. During the period of the discharge, daily syringing of the ear with water that has been boiled, or some antiseptic solution, such as the 1 to 3000 or 4000 solution bichloride of mercury, should be practiced.

The duration of an attack of acute purulent otitis media of ordinary severity is ten days to two weeks.

No treatment would be complete without due attention being paid to the condition of the naso-pharyngeal membrane As has been said before, an inflammation of the middle ear almost invariably arises from a similar condition of the mucous membrane in the neighborhood of the fauceal end of the Eustachean tube. Obviously it would be unscientific to treat simply the effect without removing the cause. Polypi, adenoid vegetations, hypertrophied tonsils, etc., should be looked for, particularly in the recurrent and sub-acute cases, and should be properly attended to before the patient is dismissed.

Discussion—Dr. Woodward. Dr. Jenne has favored us with a very admirable discussion of two very important affections. There are more cases that do not completely recover than one would be allowed to suppose from what Dr. Jenne has said. Although the majority of cases may recover spontaneously, there is a very fair percentage of cases that

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go on to nearly total destruction of hearing. For the reason that no man can tell when or what severe case is going to terminate by resolution spontaneously, and what patient is going to recover his hearing without treatment, it is extremely important that every case of earache should be attended to promptly, especially in children. If any one of you have ever suffered with earache, you will understand that it is one of the most terrible of all pains. As a humane measure, the matter should be attended to, and attended to promptly. Now, there is nothing in the world that will remove pain so quickly as a leech put upon the tragus. Of course, it could not be put on an infant or a very young child. Moreover, it not only relieves the pain, but produces a change in the inflammation of the middle ear, which promotes resolution and does away with the great danger, in most of these cases, of rupture of the membrana tympani, and suppuration of the membrane of the middle ear. I wish to speak in regard to another point, that is, after the purulent discharge has become established, the tympanum should be cleared by the Politzer method. A good way is to place in the nozzle of the air bag a few drops of tincture of iodine, which will act as an astringent. The syringing of the external canal should be thorough, as the Doctor suggests. A very good wash is bichloride of mercury. Another excellent wash, which is not irritating in the least degree, is saturated solution of boracic acid. When the discharge tends to become chronic, and if not too profuse, the best practice is to wash the ear with a solution of one or the other of these antiseptic substances, and to pack the ear with powdered boracic acid. As soon as the discharge appears through the powder, cause the patient to wash the ear with an antiseptic wash. Dry with a wad of cotton and replace the powder. Attention to this little matter will shorten the course of the suppuration very materially. Many of these people have considerable pain in the region of the mastoid. Counter-irritation over the mastoid, by tincture of iodine, is extremely useful. In adults, as a means of preventing the occurrence of acute inflammation of the middle ear, nothing is so efficient as attention to the nasal membrane. Most people in this climate are afflicted with hypertrophic catarrh. It is as easily cured as any of the ailments to which the flesh is heir. It is the most prolific of all causes of all affections of the middle ear. Attention to the nasal respiratory membranes, in the way of curative measures, should be carried out. When you have a patient who frequently suffers from cold in head, tell him not to get his feet wet, to bathe the upper part of his chest and the back of his neck with cold water every morning. You will find the condition of his nasal membranes will improve, whether you treat them locally or not.

Question. In case the leeches could not be obtained, as is the case in the country, what other means would you recommend ?

Dr. Woodward. The best measure is extreme heat applied with a

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hot bottle wrapped in a woolen stocking, or a hot sand-bag. I do not believe in poultices. Dr. Jenne brought that point out clearly. Of course the condition of the ear ought to be examined through a speculum. The introduction of a small lance needle through the membrane will allow the discharge to pass out and stop the pain. You may do this when you cannot get a leech or when you cannot control the pain with heat. The leech is the most efficient. The neuralgic pain is due to inflammation of the ear. Relieve the inflammation and you cure the neuralgia. Cocaine, I think, has but little effect upon pain. Cocaine, moreover, has but very little effect upon tissues that are in a state of inflammation.

Dr. Branch. What can Dr. Woodward say about the use of artificial leeches.

Dr. Woodward. I have not seen an artificial leech as yet, that I could apply to the tragus. An artificial leech, I think, would not be apt to draw very much blood. The best leeches have considerable difficulty in extracting blood from that part. The leech is put in the canal, and it is best to first put a little wad of cotton into the canal to keep the leech from crawling in too far. There is not the least harm in using a continuous douche of hot water, as Dr. Jenne has suggested; but it is difficult to carry that practice out. It is much more convenient to apply the dry heat, and you can apply dry heat continuously by the sand-bag, or by a bag of salt, or by a hot bottle. If you apply heat for a few minutes and then stop, the ear cools down. Then you heat it again and stop, and it cools the second time. There is in this way established an action and a re-action which are bad for the patient. There is another thing you often see in acute cases, a swelling over the mastoid process. That is always a condition which should excite your attention and should be carefully watched. It may mean that there is to be suppuration in the mastoid cells. If that swelling does not readily subside, but rather tends to increase, then the best plan is to take a knife and cut freely down to the mastoid process.

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ANTISEPTIC SURGERY IN THE COUNTRY.

By John B. Wheeler, M. D., Burlington, Vt.

The desirability of good antiseptic work is admitted much more generally than its practicability. It is all but universally acknowledged that surgery of the last fifteen years is indebted to antiseptics for the remarkable advances which it has made. But to judge from what is some times said at society meetings, and printed in communications to medical journals, there is an impression among many members of the profession that it is impossible to do antiseptic surgery in this country; that the apparatus required is too cumbrous and elaborate, and that the details of operation and dressing are too numerous and complicated to be of practical use in the rough and ready work which the exigencies of country practice demands. This paper, therefore, does not undertake the superfluous task of defending antiseptic surgery, but attempts to show that such work is as practicable in a backwoods shanty, twenty miles from anywhere, as in a metropolitan hospital.

In the first place, let me make the statement that antiseptics is nothing more nor less than surgical cleanliness—cleanliness of operator, assistants, patient, instruments and dressings. By surgical cleanliness is meant the complete absence of what we commonly understand by dirt, and, moreover, the complete absence of the germs whose development produces suppuration and the various diseases which may result from wound infection. These germs may exist in great numbers upon a surface which, to our unaided senses, appears perfectly clean, but is not so in reality until the germs have been destroyed by the action of some germicide. The working maxim is that while an object that is apparently dirty cannot be surgically clean, an object which is apparently clean may be surgically dirty. It follows from this that we must carefully and thoroughly remove all dirt by the ordinary methods, and carefully and thoroughly destroy all germs by the use of germicides. He who says that nothing but simple cleanliness is necessary to insure the best surgical results, and he who says that cleanliness is unimportant if disinfection is thoroughly practiced, are alike at fault. We need both the scrubbing-brush and the antiseptic solution.

Perhaps the best way of showing how surgical cleanliness may be practically attained, is to describe in detail the manner of conducting an operation in any house remote from city conveniences. Suppose that the surgeon has an emergency operation to deal with, at a place many miles

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distant from his own house, and that the patient is poor, as frequently happens in such cases. The first thing which claims attention is the surgeon's outfit. For this sort of work it must be efficient, portable, thoroughly antiseptic and as cheap as is consistent with efficiency. In addition to such instruments as are requisite for the operation in question, the surgeon will take with him a fountain syringe, a couple of yards of rubber cloth, an apron, a razor and nail-brush, tablets of bichloride of mercury, a few ounces of carbolic acid, iodoform, Lister's protective, drainage-tubes, silk, cat-gut, carefully disinfected sponges, gutta-percha tissue, gauze and absorbent cotton impregnated with bichloride of mercury, gauze bandages prepared in the same way, plain absorbent cotton and a paper of safety pins. A can of ether completes the outfit.

This seems like a long list, but the articles are obtainable at small expense, and can all be easily stowed in a hand-bag of moderate size.

On arriving at the scene of operation, the surgeon's first care is to cleanse and disinfect his hands and forearms by carefully scrubbing them up to the elbows with a nail-brush, until they appear perfectly clean,—especially under the nails—and then soaking them for a minute in a bichloride of mercury solution of the strength of 1–1000. After this he makes such examination of the patient as may be necessary before etherization, taking the utmost care not to touch any open wound unless his hands are thoroughly antiseptic. He then makes the solutions for operation, a carbolic acid solution for the instruments, and a bichloride solution for use in and about the wound. A quart or two will be a sufficient quantity of the carbolic solution, which is made of the strength of 1–20, and poured into some platters and saucers obtainable at the house, or in the neighborhood. In these platters and saucers, which must be perfectly clean, are placed the instruments, the threaded needles, the cat-gut and silk cut into ligatures, safety pins, a piece of drainage-tube and the Lister protective. The non-corrosiveness of the carbolic acid solution is the reason for its employment as a bath for instruments. The solution of bichloride of mercury, the strength of which varies from 1–2000 to 1–5000, is made by dissolving a sufficient number of bichloride tablets in warm water. Two or three gallons of this solution should be made. The pitchers, bowls, or whatever the solutions are made and kept in, should be perfectly clean, and the bichloride solution should be strained through clean cloth before being used, in order to get rid of the slight sediment which remains after dissolving the tablet. The fountain syringe is then filled with the bichloride solution and hung up where it can be conveniently used for the purposes of irrigation during the operation. Some of the remaining solution is poured into two bowls, one of which is to be used for rinsing sponges and the other for disinfecting the operating towels and the hands of the surgeon and his assistants. The operating towels are such towels or clean cloths as the house or the neighborhood

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affords, a few of which are immersed in the bichloride solution, and before the operation is begun are wrung out and used to cover everything in the immediate vicinity of the field of operation. During this time the patient has been anæsthetized, and may now be put upon the operating table, which can be very satisfactorily extemporized out of an ordinary kitchen table and a small stand. If these, or some equivalent articles are not to be had, the surgeon must do the best he can on the bed where the patient is already lying. The rubber sheet is then fastened around the part to be operated upon in such a way as to keep the rest of the patient from getting wet, and to conduct the irrigating fluid into a pail on the floor. The whole field of operation is thoroughly scrubbed with the nail-brush and then shaved. The razor is used to get rid of hairs which might fall into the wound and infect it, and also for the purpose of removing dirt. The amount of dirt which appears in the lather after closely shaving an already clean looking skin is surprising, and efficiently demonstrates the necessity of using the razor on any part of the body. The surgeon and assistants then give hands and arms a final scrubbing and disinfection, and the whole field of operation is thoroughly irrigated with the solution in the fountain syringe. After this process the skin may be regarded as surgically clean and fit to work upon. The towels which have been soaking in the bichloride solution are wrung out and spread over the field of operation, in order that the operator, when he happens to lay down an instrument or rest his hand on the table, or the patient's body, may touch nothing but the disinfected towels and thus avoid contact with anything which might be a source of infection. During the operation irrigation is used more or less frequently, according to the amount of blood to be washed away and the liability of the wound to infection. Before sewing up, the wound is thoroughly flushed with the irrigating solution, and then is sponged dry, in order to avoid mercurial poisoning, which is liable to occur if a quantity of the solution is left standing in the wound.

The greatest care is taken throughout the operation to avoid the introduction of septic matter into the wound. If the hands of the surgeon or his assistants touch anything that is not surgically clean—clothing, furniture, &c.,—they are disinfected anew before approaching the wound or touching instruments, sponges, ligatures or dressings. If an instrument touches any object that has not been rendered asceptic, that instrument is disinfected again before being used. If it falls on the floor, it is carefully scrubbed and disinfected before used. If a sponge falls on the floor, it is thrown away, as unfit for further use.

The operation is concluded by inserting the drainage-tube and sewing up the wound (supposing the case to be one where healing by first intention is desired). The line of incision is then dusted with iodoform and overlaid with a piece of Lister's protective, in which a hole is cut for the

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drainage-tube to come through. Then come the dressings, consisting of a few handfuls of bichloride gauze, over which is placed a large mass of bichloride cotton, which is held in place by a bichloride gauze bandage. A very thick, bulky dressing is necessary, in order to provide an antiseptic receptacle for the fluids which drain away from the wound. If the dressing is small, it quickly becomes soaked with drainage, which soon decomposes on coming in contact with the air. This necessitates the undesirable step of an early change of the dressing, in order to avoid the still more undesirable complication of suppuration, or something worse.

In applying the dressings, they are handled as little as possible, and of course only with surgically clean hands. The best way is for an assistant to bring the receptacle which contains the dressings, open it and let the surgeon take out what he wants. In this way the dressings are touched by no hands but the surgeon's.

It is not claimed that the foregoing description covers all the latest ideas in antiseptic technique. It is intended merely to give the details of a method of doing antiseptic work, which is practicable in country surgery, and not to give a resume of the most recent progress in antiseptics. Nothing has been said, for instance, of the disinfection of instruments by heat, because it cannot, so far as it has been tried, be carried out so thoroughly in the country as in a hospital. But I speak from experience when I say that the method of operating above described can be practiced amidst the most unfavorable surroundings, and with excellent results—no infectious diseases, no suppuration, but healing *per primam* almost the invariable rule in all incised wounds. It is not claimed that there can be no better way of operating antiseptically. Any method which is simpler and more thorough, ensuring greater perfection of cleanliness and disinfection, is better. This is offered as a method which, by the use of antiseptics of known and proved value, and of materials and apparatus easy for any practitioner to obtain, will give first-rate results, if faithfully and thoroughly carried out. The choice of an antiseptic, of antiseptic apparatus and of materials for dressing, is comparatively of minor importance. If the surgeon has a horror of dirty finger-nails, filthy instruments, and an unscrubbed field of operation, and if he abominates the idea of approaching a wound with anything which is not surgically clean, he will do good antiseptic work, in whatever way he goes about it.

Discussion—Dr. Wilder. I, for one, feel very thankful to Dr. Wheeler for the concise and practical manner in which he has given us his paper. The success of antiseptic surgery depends upon the thoroughness with which we execute it, the minutiae, not the declaration that we are going to carry out antiseptic surgery, but in the actual fact that we carry it out, and that implies, as has been well said, a thorough cleansing, and going even beyond what we are able to do by ordinary cleansing power, and us-

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ing means to destroy the germs. Oftentimes it has been my observation to see men sometimes practice antiseptic surgery that were very careful in some things, but a little negligent in others, and a few neglectful acts will destroy the whole work. I am very much pleased with the manner in which the paper is presented. I think it is a fact that our older physicians are apt to look lightly upon this matter of antiseptic surgery, but I think, go where you will, among the successful surgeons of this country, and other countries, (and you can count upon your fingers those whom you might call successful surgeons), you will find the successful men in large majority are strict followers of antiseptic surgery. I would like to ask Dr. Wheeler in regard to iodoform. Is there any way in which we can get along without that?

Dr. Wheeler. I have already mentioned the use of iodoform but not in the way of dispensing with it. I do not know of anything which costs no more than iodoform, which is equally efficacious. Iodol would be equally good, but that is much more expensive. Some surgeons use bismuth, claiming that they can get good results with that, but I have never tried it in the same way that I use iodoform. The principal value of iodoform, which has been the subject of much debate for the last few years, is not so much its antiseptic properties as the fact that it coagulates serum, and dries, and helps to stick the edges of the wound together. If used on a granulating surface, it stimulates granulation and hinders the formation of pus.

The following physicians were elected to membership during the meeting.

C. W. STROBELL, Middletown Springs	U. V M.,	1882
O. W. PECK, Winooski,	do	1880
M. D. LAMB, Waterbury,	do	1882
F. W. SEARS, Grand Isle,	do	1888
L. D. ROOD, Jericho,	do	1881
J. C. RUTHERFORD, Burlington,	do	1882
R. M. PELTON, Richmond,	do	1888
E. W. SHIPMAN, Vergennes,	do	1885
A. S. CUMMINS, Burlington, U. S. Army,	do	1889
E. M. POND, Rutland, Bellevue,	do	1889

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The Executive Committee made the following report:

The semi-annual meeting for 1890 will be held in Rutland.

The following gentlemen are appointed to prepare and present papers.

Drs. B. F. Sutton,	Drs. C. S. Caverly,
C. W. Strobell,	F. L. Kidder,
E. R. Campbell,	E. S. Munger,
H. L. Gale,	C. E. Chandler,
H. C. Tinkham,	O. W. Daley,
A. I. Miller,	W. R. Prime,
C. W, Petty,	E. M. Pond.

Signed,

J. M. CLARKE,
D. C. HAWLEY,
F. R. STODDARD. } Executive Committee.

The License Censors made the following report:

REPORT OF LICENSE CENSORS.

Applications for Licenses to practice medicine in the State, were received by your Censors from fourteen parties. Of this number, twelve were graduates of regular Medical schools, and received licenses as follows:

J. H. WOODWARD, Coll. P. & S, New York.

A. O. CLOTHIER, Victoria Coll., Med. & Surg., Montreal.

FRED LUTHER OSGOOD, Med. Dept. U. V. M.

OSCAR H. PERKINS, Bellevue Hospital Medical College.

E. C. STIMSON, Dartmouth Medical College.

Dr. CRAM, Med. Dept. U. V. M.

E. M. POND, Bellevue Hospital Medical College.

F. A. GARCERUX, Laval University.

R. E. WELCH, Bellevue Hospital Medical College.

GEORGE B. HATCH, Ohio University of Medicine, Cincinnati.

W. S. MANUEL, Med. Dept. U. V. M.

R. M. PELTON, Med. Dept. U. V. M.

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Two were not graduates, and such were informed that they could only receive licenses by submitting to an examination. Only one did this. He was vouched for by several practitioners, and your Censors endeavored to give him a fair chance to establish his right to practice. Each member of the Board gave him two questions upon each of the seven branches. Of these questions, less than 44% were correctly answered. Viewed in the most favorable light, we could not do otherwise than decline to grant him a license. Cases similar to this one doubtless arise every year. Some unfortunate, who has failed to get his diploma when expected, is referred by practitioners or college professors to the Censors of the State Society. While there may be exceptions, it is safe to say that as a rule, they are totally unfit for practice.

While your Censors endeavored to do no one an injustice, they determined if possible to know something about the qualifications of such candidates for licenses.

In this connection, we wish to call the attention of the Society to the report of the "Committee on Uniform Medical Legislation," at the last meeting of the American Medical Association. This report is found in the last number of the *Journal* of the Association. This Committee reports a bill similar to laws now in force in several States, which is commended to the careful attention of this Society. It provides for a State Board of Medical Examiners, who shall examine into the qualifications of all persons who wish to practice medicine in the State, whether graduates or not. That this law is a good one, is abundantly proven by the experience of States where it has been tried.

Would it not be well for our Society to take this matter up, and endeavor to get a law in this State which will give the profession and public alike, some assurance of protection from ignorance and quackery. That the present law does not do this we all know, and while we may be skeptical about meeting with success before the Legislature, our Society can in no better way show its progressiveness and its desire to make itself a power for good in the State.

C. S. CAVERLY,
J. D. BREWSTER,
J. N. JENNE. } Censors.

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Delegates to Medical Department of U. V. M., present the following report:

TO THE VERMONT MEDICAL SOCIETY.

Mr. President and Gentlemen:—

Your delegates appointed to attend the examination of candidates for the degree of M. D., as conducted by the Medical Faculty of the University of Vermont, devoted two days, July 10th and 11th, to the performance of their duties. The examination of Professors Towles and King, were oral, and were conducted in such a manner as to show the real knowledge the candidate had of the subject, and that if he passed, it must be on his own merit. The examinations of the other professors were all written, but the papers were placed at our disposal, and we had all the opportunity desired to examine them and the workings of the professors. The examinations were difficult, yet very practical, and of such a nature as to place each candidate on his own footing, to stand or fall, according to his own ability. The markings of the professors were close on all subjects, and the men of '89 who passed the examination and obtained their degree, stand in high esteem with your delegates.

It has been a pleasant task for us, who of the Alumni, to return after several years of practice, and participate in the examinations of the class,

It is with pleasure that we note the enlarged advantage and increased facilities secured to the College by the new College building and the Mary Fletcher Hospital.

It is our opinion that the instruction given students by the Medical Faculty of the University of Vermont, is of a high order; that it is as complete as it is possible to be in the time allowed, and that it is fully abreast of the Medical knowledge of the day.

Respectfully submitted,

JOEL ALLEN, M. D.
A. L. BINGHAM, M. D. } Delegates.

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The subject of a new law in the matter of licensing physicians was brought up by Dr. Rutherford and was discussed at length by Drs. Branch, Jenne, Woodward, Wheeler, Prime and Hawley.

All favored a State Board of License Censors to consist of 5 to 7 members—a majority from the regular profession and one or two from the Homœpathic and Eclectic schools,—said board to have the sole power to grant licenses.

A committee of three, consisting of Drs. C. F. Branch, J. N. Jenne and C. S. Caverly was appointed to look up the matter of bogus diplomas and irregular practitioners, also to ascertain, as far as possible, the best plan for accomplishing the foregoing object of establishing a central board of license censors to report at the next annual meeting.

Dr. Henry Janes, of Waterbury, was appointed to write an obituary of Dr. C. M. Chandler late of Montpelier.

Dr. J. B. Ransom, of Dennamora, N. Y , was elected an honorary member of the Society.

On motion the Society adjourned.,

ATTENDANCE

Drs. E. S. Albee. Bellows Falls.
D. G. Kemp, Montpelier.
A. B. Bisbee, do
C. E. Chandler, do
G. B. Bullard, St. Johnsbury.
H. S. Brown, do
W. H. Vincent, Orwell.
C. W. Petty, South Hero.
J. M. Bishop, Underhill.
F. L. Kidder, Woodstock.
H. C. Tinkham, Burlington.
Walter Carpenter, do
H. A. Crandall, do
A. P. Grinnell, do
J. H. Woodward, do
Geo. C. Briggs, do
J. C. Rutherford, do
J. B. Wheeler, do
J. M. Clarke, do
D. C. Hawley, do
A. J. Willard, do
A. S. Cummins, U. S. A., Burlington,
P. E. McSweeney, Burlington.
F. R. Stoddard, Shelburne.

Drs. O. W. Peck, Winooski.
J. H. Richardson, Winooski.
F. W. Goodall, Bennington.
S. L. Wiswell, Cabot.
S. H. Griswold, Rutland.
C. S. Caverly, do
C. W. Strobell, Middletown Springs,
B. F. Sutton, Middlebury.
C. F. Branch, Newport.
S. S. Clark, St. Albans.
J. N. Jenne, do
L. W. Adgate, East Hardwick
H. R. Wilder, Swanton.
F. H. Cilley, Jericho.
L. D. Rood, do
F. W. Sears, Grand Isle.
Joel Allen, Johnson.
W. R. Prime, Richford.
W. G. Church, Stowe.
C. M. Ferrin, Essex Junction.
Jo H. Linsley, New York City.
C. W. Jacobs, Richmond.
A. F. Peck, Westford.

C. B. Drake, delegate, W. Lebanon, N. H.

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In Memoriam.

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OBITUARY OF DR. H. F. CRAIN.

By Dr. S. H. Griswold, Rutland, Vt.

Doctor Henry F. Crain, a native of Walpole, N. H., was born September 22d, 1810, the eldest son of Dr. Eleazer and Sarah Crain. At the age of five years, his parents left Walpole and settled in the flourishing village of Springfield, Vermont, where he passed the greater part of his life. His father, a noted physician, pursued the study and practice of medicine and surgery during the remainder of his life, his death occurring in his sixtieth year.

H. F. Crain, after being well advanced in common schools, completed the study of letters in the Springfield and Chester academies. Having decided to make the study of medicine and surgery his life work, he, under the able tutelage of his father, and Dr. Amos Twitchell, of Keene, N. H., entered Dartmouth Medical College, attended the usual course of lectures, and was prosector to the professor of anatomy. He graduated, and commenced practice with his father in 1837. In 1838 he went to central Pennsylvania, where he practiced four years.

Having paid especial attention to gynæcology, and believing that some mechanical design would be beneficial in the treatment of many cases of female complaints, he, in company with his father, invented the then famous spino-abdominal supporter, and for seven years manufactured and sold them to physicians and druggists, traveling in the eastern, middle and many of the western and southern states.

In 1849 he returned to Springfield, resumed the practice of medicine, and continued in active practice till 1882, when he removed to Rutland, Vermont, where in company with his son, Dr. M. R Crain, by his ripe age, long experience, professional bearing, ready speech and affability of manners, he soon gained the confidence of a large and influential class of patrons, among whom he was appreciated to an extent seldom gained in so short a time.

He rarely neglected the wants of the sick, and was ever ready to alleviate the sufferings of his patients. Carefully investigating and diagnosing disease, he was prompt in the use of remedial agents.

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He died March 16th, 1888, after a protracted sickness of eczema, complicated with disease of the heart. At the time of his death he was a member of the American Medical Association, Vermont State Medical Society, Rutland County Medical and Surgical Society, Rutland Medical Club, and Connecticut River Medical Society.

In the death of Dr. H. F. Crain the profession sustains a loss not easily repaired,—the loss of one who, during his long professional life, held strictly to the high dignity of the profession as taught and practiced in our regular schools and colleges, never wavering from the true principles of medical ethics, discarding quackery, whether within or out of the profession. He was a critical observer of men and measures, of strong convictions, studious in keeping pace with the improvements in remedies or mechanical inventions for the better treatment of disease, testing every new element, giving rational reasons for approval or rejection. He had in his library books for reference from the most approved authors, foreign as well as American, of which he evinced a thorough knowledge, duly appreciating the great responsibility resting upon the profession which he so long and faithfully honored.

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CONSTITUTION AND BY-LAWS

OF THE

Vermont State Medical Society,

(As revised October, 1887.)

CONSTITUTION.

ARTICLE I.—NAME.

This Society shall be called the Vermont State Medical Society.

ARTICLE II. —OFFICERS.

The officers of this Society shall be a President, Vice-President, Secretary, Treasurer, Auditor, Publication Committee of three members, Executive Committee of three members, of which the Secretary shall be one *ex officio*, Board of Councillors, consisting of one from each county, and a Board of License Censors, consisting of three members, all of whom shall be elected annually at the opening of the second day's session, by ballot when demanded by any member present, or in such other manner as the Society shall direct, and shall hold their respective offices until the close of the next annual meeting, and until others are chosen.

ARTICLE III.—MEETING.

There shall be an annual meeting of this Society held on the first Thursday and Friday after the second Wednesday in October, in Montpelier, each year of the Legislature, and the annual meeting in the off year of the Legislature shall be held in Burlington, and a semi-annual meeting at such place as the Society shall direct, on the last Thursday and Friday in June.

ARTICLE IV.—MEMBERSHIP.

Any physician residing within the State, who is a graduate of a regular recognized Medical School, may become a member of this Society at any regular meeting, upon recommendation of the Board of Councillors and vote of the Society, by signing the Constitution and paying the sum of two dollars to the Treasurer.

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ARTICLE V.—Discipline.

Any member of the Society guilty of intoxication, unprofessional or irregular practice, or of gross immorality, or for other good reason, may be expelled or suspended from the Society by a vote of two-thirds of the members present at any annual meeting.

ARTICLE VI.

This Constitution may be repealed, altered or amended at any annual meeting, by a vote of two-thirds of the members present, provided such repeal, alteration or amendment be proposed at a previous annual meeting at which such repeal, alteration or amendment w ill come up for action.

ARTICLE VII.

This Society may adopt such By-Laws, not repugnant to this Constitution, and may repeal, alter or amend the same, in such manner as a majority at any annual meeting may deem proper.

BY-LAWS.

ARTICLE I.—Duties of officers.

Sec. 1. The President shall preside at all meetings and perform all the duties incident to such office. He shall deliver or cause to be read an address or dissertation on some medical subject at the annual meeting at which he presides.

Sec. 2. The Vice-President shall preside in the absence of the President, and perform all his duties and possess all his privileges. He shall deliver or cause to be read, an address, on the evening of the first day of the semi-annual meeting.

Sec. 3. The Secretary shall keep a record of the proceedings of the Society, and of the members present at each meeting; shall arrange and publish the programme at least two weeks before each meeting; shall conduct the correspondence; and shall have his necessary expenses defrayed from the funds of the Society. He shall, if unable to attend the meeting of the Society personally, send the Records to some member in attendance.

Sec. 4. The Treasurer shall collect and disburse all monies of the Society, agreeable to their directions, and make report of his doings to the Society at its annual meeting.

Sec. 5. The Auditor shall examiue and verify the accounts of the various officers.

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SEC. 6. The Executive Committee shall make selection of a subject or subjects for the programme for the next ensuing meeting; shall make assignments of the parts to any of the members, as in their judgment they think advisable, and report the same to this meeting and to each and every subsequent meeting.

They shall make such other arrangements for the meetings of the Society as they shall deem essential for its best interests.

They shall select the place and time of holding the semi-annual meeting, and shall report the same to the Society at the annual meeting.

SEC. 7. The Publication Committee shall receive all papers referred to them by the Society, and as soon as possible subsequently to the annual meeting of the Society, shall publish such of those papers as they may deem best suited to promote the interests of the profession and the public good, under the title, Transactions, and perform all other appropriate duties.

SEC. 8. The Board of Councillors shall choose its own officers and make its own regulations, providing they do not conflict with the Constitution and By-laws of this Society.

There shall be a meeting of said Board on the first day of the annual and semi-annual meetings, and at such other times as the Board shall determine.

The duties of said Board shall be to examine the credentials and qualifications, with reference to their method of practice, etc., of persons desirous of becoming members of the Society, and present at each meeting the names of such as, in their opinion, are eligible to membership under the Constitution and Regulations of the Society, and to report the names of members deceased, if any, and recommend such action in each case as they may deem best. The Councillors shall recommend for membership, only such physicians as shall present to them their diplomas, or a certificate in writing signed by some member of this Society in good standing, stating that he has personal knowledge of said applicant having a diploma of a regular medical school.

SEC. 9. It shall be the duty of the Board of License Censors to issue license certificates to regular physicians wishing to practice medicine in this State, in accordance with the State law regulating such practice.

ARTICLE II.—DUES.

SEC. 1. Every member of this Society (honorary excepted) shall pay to the Treasurer an annual fee of two dollars.

SEC. 2. Any member who shall fail to pay his dues for a period of three years, shall be dropped from the Society, and his name stricken from the roll of membership, and he shall be so notified by the Secretary.

SEC. 3. Any member who has been dropped from the Society for non-payment of dues may be re-elected after any number of years by a

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vote of three-fourths of the members present at any regular meeting, upon payment of the three years' arrearages.

ARTICLE III —HONORARY MEMBERS.

The Society may elect at each annual meeting, not more than four honorary members, non-residents of the State, who shall have the same privileges as ordinary members, except that they shall not be eligible to office, nor have the right to vote.

ARTICLE IV.—DELEGATES.

Delegates shall be appointed annually to represent this Society in the American Medical Association; the Medical Department of the University of Vermont and of Dartmouth College at the examination of candidates for graduation, when duly notified; the Connecticut River Valley Medical Society; the White Mountain Medical Association; the White River Valley Medical Association; the Northern New York Medical Association; the State Medical Societies of the New England States, together with those of New York, and such other States and societies as the mutual interests of the societies may direct.

In cases where delegates are unable to attend to the duties of their appointment, it shall be their duty to notify the Secretary, of such inability, and the Secretary and President shall appoint others to supply their places.

ARTICLE V.

Every member who is appointed to prepare a paper for any meeting shall, at least thirty days before such meeting, furnish to the Secretary a short abstract of the same, which abstract, or an epitome of which, the Secretary shall cause to be printed in the programme, following the announcement of the paper.

ARTICLE VI.

Any member wishing to withdraw from the Society shall be permitted to do so on his written request after he shall have presented the Treasurer's receipt for all monies due.

ARTICLE VII

The Constitution and By-Laws, together with the names and residences of the members in good standing, shall be published in every volume of the Transactions.

ARTICLE VIII.

The names of deceased members of the Society, with the dates of birth, graduation, admission to membership, death and such other items in brief, of personal history, as may seem desirable to the Committee on Publications, shall be printed in each copy of the Transactions under the caption, "In Memoriam."

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LIST OF MEMBERS.

The following is a list of the members of the Society:

Allen, Joel Johnson.
Allen, C. L. Rutland.
Adgate, L. W. East Hardwick.
Albee, E. S. Bellows Falls.
Andrews, B. J. Burlington.
Allard, J. F. E. Winooski.
Briggs, Geo. C. Burlington.
Bingham, L. M. Burlington.
Brown, H. S. St. Johnsbury.
Bradford, P. D. Northfield.
Bullard, G. B. St Johnsbury.
Brooks, S. T. "
Bailey, A. C. West Randolph.
Blanchord, F. Peacham.
Brewster, J. D. Windsor.
Brigham, C. W. Pittsfield.
Bisbee, A. B. Montpelier.
Bishop, E. H. Jericho.
Branch, C. F. Newport.
Boynton, Henry Woodstock.
Bingham, A. L. Williston.
Brush, E R. Cambridge.
Braley, B. W. Barre.
Bartlett; H. O. Milton.
Bryant, W. H. Ludlow.
Bruce, M. L. Brattleboro.
Burdick, L. F. Winooski.
Bugbee, A. G. Derby Line.
Bates, E. A. Highgate Center.
Brigham, F. L. Pittsfield.
Clarke, S. S. St. Albans.
Calderwood, H. S. St. Johnsbury.
Carpenter, Walter Burlington.
Cilley F. H. Jericho.
Cutting, H. A. Lunenburgh.
Clarke, J. M. Burlington.
Campbell, E. R. Bellows Falls.
Church, W. G. Stowe.
Caverly, C. S. Rutland.
Camp, C. F. Barre.
Currier, W. H. Hartford.
Chandler, C. E. Montpelier.
Crandall, H. A. Burlington.
Chesmore, A. H. Huntington.
Carver, H. S. Marshfield.
Crossman, E. O. Burlington.
Cooty, Thomas A. Mt. Holly.
Cummins, A. S. Burlington.
Draper, Joseph Brattleboro.
Dunsmore, George St. Albans.
Dyer, O. G. Brandon.
Davenport, George East Randolph.
Darling, S. E. Hardwick.
Darrah, A. J. Enosburgh Falls.
Davis, B. W. Montgomery.
Davies, A. Burlington.
Dana, E. P. South Royalton.
Erwin, C. L. Newport Centre.
Eddy, M. H. Middlebury.
Fairman, E. P. Wolcott.
Fish, E. J. South Royalton.
Fox, G. H. Rutland.
Foster, George S. Putney.
Flanders, L. W. Burlington.
Field, A. E. Barre.
Ferrin, C. M. Essex.
Green, L. M. Bethel.
Grinnell, A. P. Burlington.
Griswold, S. H. Rutland.
Gale, H. L. Barre.

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Goodrich, V. A. Brookfield.
Grout, D. D. Stowe.
Giddings, W. H. Bakersfield.
Goodall, F. W. Bennington.
Goss, S. W. Chelsea.
Gillett, H. H. Post Mills.
Howe, H. T. J. Waitsfield.
Holton, H. D. Brattleboro.
Huntington, W. M. Rochester.
Hutchinson, Wm. R. Enosb'gh Falls.
Hamilton, J. H. Richford.
Hunt, C. H. Worcester.
Hooker, E. G. Waterbury.
Hanrahan, J. D. Rutland.
Howe, H. H. Weston.
Hawley, D. C. Burlington.
House, C. P. Royalton.
Hall, E. J. Morristown.
Hopkins, W. S. Vergennes.
Hinman, C. S. West Charleston.
Hutchinson, W. W. Enosburgh.
Hawley, C. F. Fairfax.
Hazelton, D. W. Springfield.
Janes, Henry Waterbury.
Jackson, J. H. Barre.
Johnson, R. T. West Concord.
Jennings, C. G. R. Bennington.
Jenne, J. H. St. Albans.
Jones, H. R Benson.
Jacobs, C. W. Richmond.
Keenan, J. C. Rutland.
Kemp, D. G. Montpelier.
Kidder, F. T. Woodstock.
Kinney, F. C. Greensboro.
Knowlton, John, Poultney.
Ketcham, F. J. Pittsford.
Kincade, R. M. Highgate Centre.
Locke, C. W. Grafton.
Lane, George E. Ludlow.
Linsley, Jo H. Burlington.
Ladue, F. L. Alburgh Springs.
Lee, H. H. Wells River.
Lund, W. B. Burlington.
Langdon, S. W. Sheldon.
Leach, C. L. Swanton.
Letourneau, A. A. Burlington.
Lawton, S. E. Brattleboro.
Lamb, W. D. Barre.
Munger, E. S. Putney.
McSweeney, P. E. Burlington.
Miles, J. W. Hinesburgh.
Miles, J. F. Hinesburgh.
Morgan, J. B. Cambridge.
Morse, F. L. Windsor.
Miller, A. J. Brattleboro.
Nutting, D. H. Randolph.
Newell, H. L. Proctor.
Newton, J. P. Benson.
Nimblett, O. L. Monkton.
Nichols, George B. Barre.
Porter, Edwin Northfield.
Peck, C. W. Brandon.
Phelps, O. W. Bellows Falls.
Perry, C. C. Bethel.
Paige, S. W. St. Albans.
Prime, W. R. Richford.
Pratt, C. S. Brattleboro.
Petty, C. W. Keeler's Bay, So. Hero.
Pelton, R. M. Richford.
Pond, A. M. Rutland.
Peck, O. W. Winooski.
Rodeman, H. L. Bridgewater.
Richmond, J. S. Windsor.
Rugg, D. F. Hartland.
Rodgers, Lyman Bennington.
Richmond, Dean Windsor.
Ray, C. J. Jamaica.
Russell, C. J. Hinesburgh.
Rublee, C. C. Morrisville.
Richmond, J. H. Winooski.
Robinson, F. D. St. Albans.
Rood, L. D. Jericho.
Rutherford, J. C. Burlington.
Smith, C. C. Gaysville.
Skinner, R. B. Barton.
Sperry, C. A. Quechee.
Scott, C. A. Tyson.
Sherwood, R St. Albans.

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Swift, H. H. Pittsford.
Sherwin, O. W. Woodstock.
Stoddard, F. R. Shelburne.
Shaw, E. M. Barnet.
Sutton, B. F. Middlebury.
Stafford, F. D. Whitingham.
Stickney, O. G. Georgia.
Strobell, C. W. Middletown Springs.
Sears, F. W. South Hero.
Shipman, E. W. Vergennes.
Tinkham, H. C. Burlington.
Thompson, J. E. Rutland.
Upham, E. F. West Randolph.
Vincent, W. H. Orwell.
Varney, W. H. H. Charlotte.
Woodward, A. T. Brandon.
Watson, O. L. West Topsham.
Worthen, H. O. Barre.
Wiswell, S. L. Cabot.
Wilder, H. R. Swanton.
Willard, A. J. Burlington.
Wheeler, J. B. Burlington.
White, P. P. Williamsville.
Winch, J. H. Northfield.
Warner, M. D. Cabot.
Willard, G. F. B. Vergennes.
Woodward, J. H. Burlington.
Whipple, E. O. Danby.
Welch, R. E. Franklin.
Weeks, W. A. North Walden.
Wright, J. F. Barton Landing.

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TRANSACTIONS

OF THE

VERMONT.

STATE MEDICAL SOCIETY,

FOR THE YEAR 1890.

PUBLISHED BY THE SOCIETY.

ANNUAL MEETING THE FIRST THURSDAY AND FRIDAY AFTER THE SECOND WEDNESDAY IN OCTOBER.

BURLINGTON, VT.:
R. S. STYLES, BOOK AND JOB PRINTER.
107 Saint Paul Street.

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TRANSACTIONS

OF THE

VERMONT

STATE MEDICAL SOCIETY,

FOR THE YEAR 1890,

PUBLISHED BY THE SOCIETY.

ANNUAL MEETING THE FIRST THURSDAY AND FRIDAY AFTER THE SECOND WEDNESDAY IN OCTOBER, AND THE SEMI-ANNUAL MEETING THE LAST THURSDAY AND FRIDAY IN JUNE, AT SUCH PLACE AS DIRECTED AT THE PRECEDING ANNUAL MEETING.

BURLINGTON, VT.:
R. S. STYLES, BOOK AND JOB PRINTER,
107 Saint Paul Street.

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NOTE.—Each article published herein stands upon its own merits, as the expression of its Author's opinion, for which the Society does not hold itself responsible.

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TRANSACTIONS

OF THE

Vermont State Medical Society,

1890.

SEMI-ANNUAL MEETING.

The semi-annual meeting of the Vermont State Medical Society was held in Rutland on Thursday and Friday, June 26 and 27, 1890.

The sessions were held in the Board of Trade Rooms, on Merchants Row.

The meeting was called to order at 11.15 A. M. by the President, Dr. H. S. Brown, of St. Johnsbury.

Prayer was offered by the Rev. Mr. Niles, of Rutland,

The records of the last annual meeting were read by the Secretary, and approved.

Dr. A. T. Woodward, of Brandon, spoke on The Treatment of Cystitis. He presented a device of his own for irrigating or douching the bladder, which consisted of a soft rubber catheter, with a hard rubber cup surmounting it. The capacity of the cup was two ounces He claimed we should never put more than two ounces of fluid into the bladder at a time.

The subject was discussed by Dr. F. W. Goodall, of Bennington. He advocated the use of a blunt hard rubber instrument similar to the nasal tip of a common syringe, which would enter the penis only three-quarters of an inch. The subject was also discussed by Dr. M. R. Crain of Rutland.

Adjourned until 2 o'clock P. M.

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AFTERNOON SESSION.

Met at 2.15 P. M

Dr. J. H. Jackson, of Barre, was elected a delegate to the British Medical Association.

The discussion on Cystitis was again taken up and was participated in by Dr. Goodall, Dr. D. C. Hawley and Dr. C. W. Strobell.

Dr. F. W. Goodall read a paper entitled "The Successful Treatment of Extreme Opium Poisoning, by Forced Respiration."

The paper was discussed by Dr. J. H. Woodward, of Burlington.

A paper by Dr. C. E. Chandler, of Montpelier, on "The Treatment of Hay Fever, with the Report of Cases," was read by the Secretary.

This paper was discussed by Drs. J. N. Jenne and J. H. Woodward.

Dr. Edw. R. Campbell, of Bellows Falls, presented a paper entitled "Nature's Remedies." Discussion followed, which was participated in by Drs. D. C. Hawley, George Spafford, H. S. Brown, C. W. Strobell, F. W. Goodall, H. S. Griswold, J. H. Brilly and E. S. Albee.

Adjourned to 7.30 P. M.

EVENING SESSION.

Called to order at 8 o'clock.

A paper by Dr. F. T. Kidder, of Woodstock, on "Tonsillitis," was read by the Secretary. The subject was discussed by Drs. H. R. Wilder, J. H. Brilley, C. W. Strobell and J. H. Jackson.

Dr. C. W. Strobell read a valuable paper on the "Prophylaxis of Tuberculosis." This was discussed by Dr. C. L. Allen.

The subject of the "Vermont Medical College" of Rutland was brought up by Dr. D. C. Hawley. The subject was discussed by Drs. J. H. Brilly and C. L. Allen of Rutland, and on motion was laid on the table until the next meeting.

The following physicians were elected to membership during the meeting:

J. B. Woodhull, So. Shaftsbury; C. B. Ross, West Rutland; J. H. Brilly, Rutland; A. E. Moody, Isle LaMotte; Wm. F. Hazelton, Springfield; B. C. Seuton, Rutland; Wm. E. Stewart, Wallingford.

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ATTENDANCE.

F. T. Kidder ..... Woodstock.
A. T. Woodward ..... Brandon.
C. W. Peck ..... Brandon.
J. H. Woodward ..... Burlington.
J. M. Clarke ..... Burlington.
D. C. Hawley ..... Burlington.
F. W. Goodall ..... Bennington.
M. R. Crain ..... Rutland.
J. D. Hanrahan ..... "
C. S. Caverly ..... "
J. H. Brilly ..... "
S. H. Griswold ..... "
George H. Fox ..... "
Amelia E. Brown ..... "
B. C. Seuton ..... "
C. L. Allen ..... "
A. O. Clouthier ..... "
W. H. Vincent ..... Orwell.
H. R. Wilder ..... Swanton.
F. L. Ladue ..... Alburgh Spa.
C. W. Strobell ..... Middletown Spa.
S. L. Wiswell ..... Cabot.
H. S. Brown ..... St. Johnsbury.
W. B. Sargent ..... Pawlet.
H. L. Newell ..... Proctor.
L. D. Ross ..... Poultney.
George Rustedt ..... Shrewsbury.
A. E. Moody ..... Isle LaMotte.
N. J. Tousley ..... Panton.
John Avery ..... Wallingford.
S. S. Clark ..... St. Albans.
Edw. R. Campbell ..... Bellows Falls.
E. S. Albee ..... Bellows Falls.
George Spafford ..... Cavendish.
F. L. Brigham ..... Pittsford.
W. F. Hazelton ..... Springfield.
W. F. Bryant ..... Ludlow.
C. S. Pratt ..... Brattleboro.
A. E. Bruce ..... Brattleboro.
F. R. Stoddard ..... Shelburne.
J. H. Jackson ..... Barre.
W. E. Stewart ..... Wallingford.
H. H. Swift ..... Pittsfield.
M. H. Eddy ..... Middlebury.
F. H. Clapp ..... Brandon, N. Y.

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A vote of thanks was tendered the Rutland Board of Trade for the use of their rooms for the meeting, and to the Railroads for the courtesy of half fare.

On motion, adjourned.

After adjournment the Society met at the Bardwell House, where an elegant banquet was tendered us by the Physicians and Druggists of Rutland. Delightful music was furnished by an orchestra.

The post-prandial exercises, in charge of Dr. George H. Fox, of Rutland, were one of the delightful and entertaining features of the evening. The banquet was a superb success, and will long be remembered by all present.

D. C. HAWLEY, M. D.,
Secretary.

FORCED RESPIRATION IN OPIUM POISONING.

By Dr. F. W. Goodall, of Bennington.

Mr. President and Gentlemen of this Society:

We have very recently had two deaths in Bennington, and one in Hoosic Falls, a few miles from me, from opium poisoning, the first of which, I think, should have been saved. At least so eminent a gentleman as the physician in attendance—a gentleman who, in the Atlantic Monthly for December, 1884, in an article entitled "Over the Andes," on page 788, says as he was crossing the mountains he reduced an "old dislocation of the hip joint with strong adhesions" "without a shriek" from the patient, with no anæsthetic other than a little brandy and water and no assistance other than a small boy, who "lighted match after match", the only available means of illuminating a hut where the darkness was so intense as to be "palpable",—should have made an effort to use Dr. Fell's method of prolonging life, thereby favoring the elimination of the poison and a restoration to health.

It was at the annual meeting of the New York State Medical Association that I had the great pleasure of listening to a paper by George E. Fell, M. D., Professor of Physiology in the Niagara University of Buffalo, N. Y., upon a new method of saving life, as first originated and executed by himself upon human beings. This method, which is peculiarly his own, he styles "Forced Respiration," in distinction from other methods of artificial respiration, such as Hall's, Sylvester's, Howard's and others, which he says, "depend for their success upon the move-"ments of the limbs or body of the patient, supplemented by pressure of "the thorax on the part of the physician; those in which tubes and "mouth pieces are used and the air supplied by bellows in different "forms; and the methods used on different animals, in the physiological "laboratory in which the trachea is opened to supply the air for respira-

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"tion. To the latter method, which in operation required the forcing "of air into the lungs by means of mechanical appliances, I (Dr. Fell) "have heretofore suggested the term *forced respiration* to distinguish it "from the ordinary methods of *artificial respiration*. The necessity for "a distinctive term and its appropriateness will be conceded when it is "noticed that respiration has been successfully carried on in man by these "forcible means for many hours after artificial respiration has proved "futile. The operations are so different in application that a distinctive "term is absolutely required to prevent confusion."

You are referred to the Transactions of the New York State Medical Association, Vol. 5 for 1888,—an illustrated volume of over six hundred pages,—for a full history of this operation and a few of its brilliant results, which I have greatly abridged, that I may bring the subject before you in a manner not to burden those who are already familiar with it, but to excite an interest in such as have not fully recognized its inestimable value when the life of a fellow being is surely passing away and no other known remedy can be relied upon to avert this terrible calamity. If this effort shall be the means of awakening an interest in this subject, which will some day enable any of you to save a human life, otherwise hopelessly beyond rescue, I shall have accomplished much.

"That comparatively little attention has been given to the subject of forced respiration upon man may be accounted for by the general belief that artificial respiration, as practiced, would accomplish all that could be expected of the former. The opinion has also prevailed that more forcible measures than those used in artificial respiration would endanger the delicate lung tissue, or that the air vesicles might be ruptured.

"We may instance the very generally accepted Marshall Hall's Ready Method 'in Asphyxia', wherein we find the use of the bellows or any forcing instrument strongly condemned. Even in some of our 'Visiting Lists,' where we might expect to find only axiomatic phrases, this rule is laid down, with special stress upon the inadvisability of using any 'forcing' measures or 'instrument'.

"While forced respiration has been practiced for many years, both here and abroad, upon animals in physiological laboratories, in vivisection experimentation, we have yet to ascertain that such application has taught it to be considered as of value in the saving of human life, the keeping up of respiration in the human organism, or as a means of resuscitation in asphyxia.

"Can this be wondered at when high authorities inform us that artificial respiration will supply the blood with oxygen fully as well as forcible measures, or utter statements which convey just such impressions?

"In a short discussion which ensued upon the report of my first case, presented to a section of the International Medical Congress at Washington (Sept., 1887) several physicians took the ground that the operation of forced respiration was not needed; that artificial respiration

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(Sylvester's Method) would have accomplished as much. With such statements, accepted and supported by the mass of surgical literature, it would be ridiculous to assert that the methods employed in the physiological laboratory were considered valuable in the resuscitation of human beings in asphyxia. I will now defend the position, based upon my own experience, (Dr. Fell's) that artificial respiration, as practiced by the Sylvester method,—which is conceded to be one of the best—will fail to supply the lungs with air in sufficient quantity to keep up the action of the heart in deeply narcotized subjects, where forced respiration, in many cases, would prove entirely successful. In one of my cases, the opinion was expressed by an experienced physician who witnessed the operation, that the simple institution of artificial respiration, through the bodily movements required, might have proved disastrous to the patient, owing to his weakened condition from the loss of blood. The contrast between the two in operation is very noticeable. In artificial respiration the patient is tugged, squeezed, and rolled about, according to the method employed; while in forced respiration he is entirely passive, and will lie for hours without moving or appearing uncomfortable as long as the latter procedure is properly kept up. In the case just referred to the life of the patient depended on forced respiration for nearly a day and a quarter, and now the patient is as well as ever.

"Many times during my assistantship of two years in the physiological laboratory of the Medical College in Buffalo, when operating upon canines for the purpose of exhibiting the thoracic viscera in action, the animal has been overdosed with the anæsthetic, and respiration would cease. Under these conditions artificial respiration was always resorted to, and kept up by pressure at intervals upon the chest, after which the operation of opening the thorax would be continued, and usually among the last procedures would be the substitution of the forced respiration by opening the trachea and using the bellows. It was not 'taught' that even the life of a dog could be saved by forced respiration.

"Of the almost thousands of graduates of this venerable school, not one excepting myself ever made the attempt to save human life by forced respiration after tracheotomy, and I would most positively aver that this application was not learned in a medical school."

The application of forced respiration per tracheotomy in the treatment of narcotism from opium or morphia appears to have been original with Dr. Fell. The circumstances which led up to this plan of treatment are briefly as follows. In June, 1886, Thomas J. Dyke, a drug clerk, took an overdose of morphine. The symptoms of poisoning were very pronounced, and with the whole equipment of a most complete drug store, and supplemented with the most approved methods of resuscitation, the patient slowly died. Dr. Fell says:

"At this time I felt most keenly the inadequacy of the methods at our command. I thought of the work in my physiological laboratory;

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I was conversant with the requirements and procedure in the performance on dogs; I was supplied with the apparatus, and I at last obtained a suitable patient upon whom to operate.

"At 12.30 A. M. Saturday, July 23d, 1887, I was called to attend Mr. Patrick Burns, book-keeper, residing at No. 49 Morgan street. I found the patient in a semi-conscious condition. His wife reported that he had been drinking heavily for a week past, and had been in the habit of using alcoholic liquors to excess for ten or twelve years. His present excesses induced him to try chloral to produce sleep, but finding that unsuccessful, he added twenty grains of morphine (approximately) with the following results:

"According to his statement he had taken the drug late on Friday afternoon, so that sufficient time had elapsed to permit complete absorption. When first discovered by his wife he was breathing stertorously, and was with difficulty aroused. A draught of black coffee was given, which produced vomiting. On my arrival I supplemented this with one of mustard, sodium chloride, and water, which effectually emptied the stomach. This produced no farther effect, as the patient, left to himself, immediately passed into the deep, narcotic condition of opium poisoning. The pupils were markedly contracted, and it was evident a serious case was in hand. At this time I administered two cathartic pills which I had with me, and, at different times, minim doses of fluid extract of belladonna: sent for some atropia, and frequently administered the one-sixtieth of a grain hypodermically. To keep the patient awake he was dressed and two attendants walked him around the block in the cool, pure atmosphere of the early morning. At each round I examined him and administered more atropia. The fourth or fifth time round, when within one half block of the house, his limbs gave out, and while being tugged and jerked along, stertorous breathing began again; he was carried into the house and laid on the floor, as I believed, to die. This was about 3.30 A. M. As the respirations failed, and the intervals between them lengthened, Sylvester's method of artificial respiration was employed, and kept up at intervals long after I had given up any hopes of the man's recovery and until I was thoroughly exhausted, and, farther, without apparent benefit to the patient. In the meantime, I notified the family that the patient could not live.

"At this juncture Father Grant, of the cathedral, appeared, and performed the last rites of the Catholic Church. At my suggestion, a bed was prepared in the front parlor of the house, and the patient laid upon it. From Mrs. Burns I obtained the data for the death certificate, which I confidently expected to fill in the morning. I then took a last look at the patient, only to confirm my opinion that death was imminent, and then thought nothing more could be done. I was too thoroughly fatigued to think of forced respiration. The pulse, before Father Grant came, had registered as high as 180, and before I left the house it could

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have been counted with difficulty: I considered it 200 or more. The respirations at four o'clock in the morning were five per minute, and, when I left the house for home, were intermittent, or with a long intermission, followed by a few spasmodic respiratory efforts, and then apparent inanition for a time. I left for home a little after five o'clock in the morning, went to bed, and, after a sound sleep, was awakened by a call about eight o'clock.

"Dr. F. R. Campbell, who, through illness, had been unable to respond to an early summons from Mrs. Burns, called about 8 A. M. and finding Mr. Burns still alive, sent for me. I promptly repaired to the house, and indeed the patient was alive, with respirations, however, not more than one per minute, and the pulse with difficulty to be detected at the wrist. The extremities were quite cold; the face had assumed a cyanotic appearance; pupils still contracted. The doctor suggested that more atropia be given hypodermically, to which I assented. Together we repaired to the drug store near by, had some powders prepared, and on our return were surprised to find the pupils *widely dilated*; it is needless to say no more atropia was administered. The sudden dilatation of the pupils was undoubtedly caused by the paralysis of the nerve centers controlling the iris, and is one of the frequent conditions in the last stages of opium-poisoning, and indicative of general muscular paralysis; it is also known as the 'dilatation of asphyxia'.

"Dr. Campbell made the remark, 'we can do nothing more now.' I agreed with him; but recalling the case of Mr. Dyke, and my views then entertained, I mentioned to Dr. Campbell my conviction that Mr. Burns' life might be saved by opening the trachea, placing a tube in it, and with suitable apparatus, keeping up the respirations until the poison could be eliminated. I informed him that I had the apparatus used on dogs in the laboratory of the college at my residence near by. He offered to assist if I would make the experiment. With the aid of a gentleman stopping at the house, I obtained the apparatus. On my way I asked Dr. G. H. McMichael to assist in the operation.

"The tracheal tube was quickly cleaned with a bichloride solution, and the operation of tracheotomy begun at 9 A. M. The hæmorrhage was overcome before incising the trachea. The greatest difficulty was experienced in passing a ligature about the trachea to prevent the air from passing up the throat. After this was accomplished we were ready to begin the respirations. The blood passing from the incision was of a dark coffee color, indicating an extreme venous condition. Having been deeply occupied with the operation I had not noticed the condition of the patient farther than to be able to state that no respiratory effort had been made for some time, and that the dark blue tinge of the face had materially increased.

"We began the forced respirations; and as some interesting physiological changes ensued, it may be well to note them carefully. (See

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effects of forced respiration on narcotised human subjects, page 59.) The lungs were inflated; not the slightest expiratory effort was made, indicating not only paralysis of the muscles of respiration, but loss of elasticity in the lung tissue.

"No mention has been made of the difficulty encountered after the patient revived and began to move uneasily about; these movements loosened the tube in the trachea and started hæmorrhage, and as at this time the patient was depending upon the forced respiration for his life, the result was made uncertain. This was the most serious time in the operation. In the house were boarding three soldiers of the U. States recruiting service, who were quickly summoned, and performed efficient service in restraining the patient. At this time, and before the tracheal tube was first inserted, considerable blood passed into the lungs; it was subsequently coughed out at the opening of the valve of the apparatus. At 12 o'clock, mid-day, after the forced respiration had been under way two and one-half hours the ordinary tracheotomy tube was substituted for the tube of the apparatus, and the patient allowed to breathe for himself.

"To add to the uncertainties of this case the night following the operation a bad attack of delirium tremens set in; the patient became quite violent, requiring at times four or five men to restrain him. This condition passed away, and with the exception of abnormalities in the number of respirations, nothing farther happened to complicate the case."

At the close of Dr. Fell's paper of September, 1889, he gave the following resume of all cases reported to date:

"Case No. 1. Dr. Fell, Buffalo, N. Y. Adult. Morphia, grs. xx taken. Forced respiration; two and a half hours, saved life."

"No. 2. Prof. Dr. Boehm, Vienna, Austria. Morphia, grs. 8.24 taken. Forced respiration for four and one-half hours, saved patient."

"No. 3. Dr. Fell, Buffalo, N. Y. Adult. Tr. Opii. 2 oz. taken. Forced respiration for fourteen and one-half hours, saved patient."

"No. 4. Dr. Fell, Buffalo, N. Y. Adult. Tr. Opii. 2 oz. taken. Anterior jugular vein and trachea cut with a razor. Patient almost exsanguinated. Forced respiration for twenty-four hours,—twenty-one and one-half continuously, with transfusion of 8 oz. of salt solution; saved life."

"No. 5. Dr. Fell, Buffalo, N. Y. Adult, 80 years of age. Tr. Opii. 1 oz. taken. Forced respiration for twelve and one-half hours failed to save the patient."

"No. 6. Dr. Fell, Buffalo, N. Y. Infant, eighteen days old. Morphia Sulph. 1 gr. taken. Five hours afterward forced respiration kept the child alive for four hours."

"No. 7. Dr. Fell, Buffalo, N. Y. Adult. Morphia, in large but unknown quantities taken. Operation undertaken after pulse at wrist was lost; dilatation of asphyxia had taken place; auscultation failed to

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detect heart action, and blood on tracheotomy was venous. Forced respiration produced return of pulse at both wrists, and clear action of the heart on auscultation. Blood became arterial. Heart ceased beating in about one hour."

"No. 8 Dr. Fell, Buffalo, N. Y. Still-born infant. Compression of brain," caused by laceration and hæmorrhage, as shown by autopsy, "prevented forced respiration from proving successful."

"No. 9. Dr. Fell, Buffalo, N. Y. Adult. Tr. Opii. 2 oz. taken. Forced respiration, after eleven hours, saved the patient."

"No. 10. Dr. Fell, Buffalo, N. Y. Adult. Morphia, grs. v to x, and Tr. Opii. 2 oz. taken. Forced respiration, after fourteen hours, saved life."

Concerning the outcome of these cases in which recovery took place, there can be no question but what forced respiration is alone to be credited with the saving of several, if not all, of these lives, and yet all the cases reported did not terminate so happily.

At just what stage or condition one would be justified in not using forced respiration, Dr. Fell said: "Having now saved five human lives which could not otherwise have been saved, it is difficult to state at what stage preceding death it will not prove valuable. The only safe rule is to make the attempt, and place your patient beyond the question of uncertainty as far as this operation is concerned, and a favorable result will occur in the majority of cases."

Too great publicity of this practice can not be given it. The almost daily occurrence of death from opium poisoning, reported in the public press of the country, from San Francisco to Portland, Me., in which it is asserted that every means was resorted to to save life, but in which forced respiration per tracheotomy was not practical, and in too many cases was probably unknown to the physician, in which a personal correspondence with physicians elicits the opinion not infrequently that cases in their charge could have been saved in that manner, indicates that physicians should not only be forewarned but forearmed.

Since writing the foregoing, in correspondence with Dr. Fell he informs me that he has added another life to the list of lives saved, in which artificial respiration was of no avail. This, his last case, was a young girl who had taken eight grains of sulphate of morphia was treated by a new device for forced respiration,—the trachea not being opened,—which consists of a firm rubber cap fitting tightly over the nose and mouth of the patient, and will answer in some cases. This device I have not yet seen, but I take pleasure in now exhibiting to you such of his apparatus as is required to do forced respiration per tracheotomy. An apparatus for imparting moisture to the air, also for warming it for cases requiring air for inhalation warmer than the surrounding atmosphere, can easily be added to the outfit.

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TREATMENT OF HAY-FEVER,—WITH THE REPORT OF CASES.

By C. E. Chandler, Montpelier.

An essential, in the successful treatment of hay-fever, is a knowledge of the anatomy of the nasal cavities. Briefly and for our purpose, it may be described as follows: Each nasal cavity is divided into two regions, a superior or olfactory, and inferior or respiratory region. The olfactory region, the function of which is smell, is the upper portion of the cavity, corresponding to the distribution of the olfactory nerve. It includes the superior turbinated and upper third of the middle turbinated bone, and adjacent septum. The respiratory region is the remaining portion of the cavity, and is the only part of the passage that concerns us, in the treatment of hay-fever.

The mucous membrane covering this part is much thicker, very highly vascular, and resembles erectile tissue. This description applies more closely to the membrane covering the inferior turbinated bone. The posterior and middle portion of this membrane is supplied by sensory filaments from the spheno palatine ganglia. The anterior portion derives its nerve supply from the nasal branch of the ophthalmic nerve. The function of this region is to afford warmth and moisture to the inspired air, and free it from impurities before reaching the lungs.

Sensitive areas are certain spots, in the nasal cavity, which are capable of exciting reflex symptoms, from the irritation of a probe or other foreign substances.

Three such areas have been described, one or all being implicated in the production of hay-fever. The first is Hack's, situated over the anterior extremity of the inferior turbinated bone: the second is Mackenzie's, at the posterior extremity of this bone: the third is Sajou's, situated in the vestibule of the nose. A fourth has also been described at a corresponding point on the septum.

In the nine cases of hay-fever, which are reported, Hack's area has been affected, either by hyperæsthesia, or vascular engorgement, sufficient, at times, occlude the nose or true hypertrophy of this membrane. The difference between the two latter conditions is readily shown by the application of cocaine. If hypertrophy exists, there is considerable swelling after the blood-vessels are fully contracted. In only one of these nine cases was there simply a sensitive area at Hack's point and in this case, there was a vascular growth, touching the septum, about the middle of the turbinated bone. In the other eight cases, there was a

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vascular enlargement at Hack's area, two of these having considerable hypertrophy. In two of the cases, there was also hypertrophy at the posterior extremity of the turbinated bone. These two cases had attacks of asthma, confirming the views of Sajou, who believes that the posterior part of the nasal cavity is affected in the production of asthma and that the anterior part of the cavity is affected in the production of nasal and ocular symptoms.

At present there is a difference of opinion as to the cause of hay-fever. Some authors maintain that it is a purely neurotic affection; others, that it is simply an irritation of the nasal mucous membrane; others, that it is a mixture of the two conditions. The method of treatment, which has been successful, has been by applications of acids or the use of the snare. Cocaine is first applied. A small probe, the end of which is covered with cotton, saturated with acetic acid, is pressed upon the swelling or sensitive area. The applications are made every day for a week until the enlargements are reduced. They may be repeated after a few days of rest, if much swelling exists or the patient is not relieved.

Usually from three to twenty applications are necessary to effect a cure. If only sensitive areas are found, but few applications are required. Some authors recommend the use of the acid every four or five days, but in these cases that has not been sufficiently often to control the symptoms.

In some cases, nitric acid was used, the enlargements not being removed by acetic acid, possibly due to the poor quality of the acid. More care is necessary in the use of nitric acid, as other parts of the cavity might be touched, producing a slough or a purulent inflammation.

In one case, such an inflammation followed, which was very troublesome and lasted about one week. No disagreeable symptoms ever followed the application of acetic acid or the use of the snare The best plan is to remove all enlargements with the snare, without waiting for the slow action of acids. In this way, the patient is immediately and permanently relieved.

Vascular enlargements must be operated upon without the use of cocaine. In hypertrophy, it may be applied to alleviate the pain.

Hæmorrhage can easily be controlled by applying the powdered subsulphate of iron or plugging the anterior nares. The cases can be treated more readily during the attack, as the portion of membrane involved is more sensitive and enlargements are increased in size.

I have frequently seen the conjunctiva become clear, the intolerance of light and excess of tears cease, as soon as fifteen minutes after applying acid to the affected areas.

In only one case was there anything abnormal to be seen in the nasal cavity previous to the attack. In this case, a month before the nasal paroxysm, a large hypertrophy existed in Hack's area, each side,

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The attacks had not failed to make their appearance for twelve years, varying but a few days from the third of August each year. In one case, only one nasal cavity was affected, the symptoms being confined to the right side of the nose and right eye. In one case there was a vascular growth in only one cavity, yet both nasal cavities and both eyes were affected. In the remaining seven cases, both sides of the nose were similarly diseased.

Of the nine cases, one has remained without an attack five years. One four years, with the exception of a few days the second summer after treatment, when two applications of acid cut short the attack. One case has been three years without symptoms; one case two years. One case has passed one summer without a paroxysm.

In four cases that were treated last summer, the symptoms were immediately checked and have not returned. In ten of these cases the areas were not thoroughly cauterized and I have no doubt symptoms will recur.

REPORT OF CASES.

Case 1. June, 1885. Miss G. P., 21 years of age. In good health, with the exception of hay-fever from which she has suffered for the past nine years. The attacks commenced about the first of June, lasting three months. Was never entirely free from symptoms during that time. The ocular symptoms were very severe, the patient being obliged to remain in a dark room from one to six weeks each summer. Never had asthma. Had not received any benefit from the usual remedies. A week previous to the expected attack, acetic acid was applied daily to Hack's area, which seemed to be sensitive. Slight symptoms appeared the usual time. Swelling existed at Hack's point. Sajou's spots were sensitive. About twenty applications were made during the summer. The symptoms were checked and the patient has not had an attack to the present time, a period of five years.

Case 2. June, 1886. W. D. S., farmer, 24 years of age. Had hay-fever for the past four summers. The attacks commenced in May. Was never able to handle hay without producing violent sneezing, watery discharge from the nose, injection of the conjunctiva, photophobia and lachrymation. These symptoms disappeared in a few days. During the attack of hay-fever often had asthma, especially troublesome at night, compelling him to sit up in bed. There was a vascular hypertrophy in each cavity at Hack's and Mackenzie's area. Vision was 20–20. P. P. 5 in.; P. R. 18 ins. Had slight hypermetropia, but never wore glasses. Symptoms were checked in three or four days, after commencing treatment. At the end of a week could pitch hay in his barn without exciting symptoms. He was treated three weeks. Since that time he has been free from hay-fever or asthma with the exception of a few

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days in the summer of 1887. Slight symptoms appeared and two applications were made.

Case 3. October, 1887. Miss M. D. W., housekeeper, 46 years of age. Has hypermetropia and wears the correcting glasses. In September, 1885, suffered from what she called "a cold in the head." After two or three weeks was suddenly seized with hay-fever, compelling her to stay in a dark room, and keep the lids constantly bathed in hot water to obtain relief. Since then she has never been free from an attack longer than one month at a time. The duration of an attack was from three days to five weeks. The right eye and right nasal cavity alone were affected. She suffered as much in winter as in summer. The watery discharge from the nose was very profuse, saturating fifteen or twenty handkerchiefs in the course of the day. The attacks were sometimes provoked by riding in the cars, driving in the dust, the odor of perfumery or plants. At other times the paroxysm appeared without any exciting cause, even when sitting in church. There was a vascular growth in the right nasal cavity at Hack's area. The treatment began in October, 1887 and after four weeks she remained free from symptoms.

Case 4. July, 1889. Mrs. A., 38 years of age. Always lived on a farm. Had hay-fever for the past twelve years, the symptoms appearing regularly on the third day of August. Never varied three days from that date. The duration of the attack was from six weeks to two months. During that time was unable to attend to her work. About one month before the expected attack, the nasal cavity was examined. Hack's swelling was found in each cavity. Cocaine removed nearly all the swelling, showing that it was composed chiefly of blood-vessels. These hypertrophies were removed with the snare. No symptoms appeared that season.

Case 5. Sept. 1889. Mr. M., 40 years of age. Said he had had catarrh seven or eight years. At times, had hay-fever lasting from a few days to three weeks.

Was examined during a paroxysm. Hack's swelling in each cavity prevented nasal respiration. Symptoms were checked by one application. The areas were cauterized five times. After the swelling subsided, five or six polypi were discovered springing from the middle turbinated bone and posterior extremity of the inferior turbinated bone. These were removed with the snare. Symptoms have not returned.

Case 6. August, 1889. Mrs. L., of Boston, 55 years of age. Came to this village to escape the usual attack of hay-fever and asthma from which she has been a sufferer for the past fifteen years. A change of climate lessened the severity of the attack and shortened the duration. This was the only relief ever obtained. At this time she had an attack of hay-fever and asthma. The anterior area in each cavity showed a vascular enlargement. After using the acid a few times the

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symptoms disappeared. There was no return during her visit of four weeks. The usual exciting causes could not be made to produce an attack.

Case 7. August, 1889. Miss L., 24 years of age. Came from Boston to escape a paroxysm, but received no benefit from the change. Had attacks at intervals for eight or nine years. Resided nearly all of this time in New York State to avoid the disease. When I first saw this patient, she was confined to her room with asthma, which had lasted about one week. Temperature was 102° F.; respiration 30; pulse 120 per minute. Was unable to sleep and sat up a greater part of the night. Slight hay-fever symptoms were present. Hack's and Sajous areas were both sensitive. About the middle of the right inferior turbinated bone, was a vascular growth, touching the septum. This growth was removed with the snare without the use of cocaine, and the sensitive spots were cauterized. The symptoms disappeared so quickly after the removal of the growth that I cannot help feeling that this was the exciting cause.

Case 8. April, 1889. Miss S., 32 years of age. Had attacks of hay-fever the past two years. The last two months the symptoms have been constant. Nasal symptoms have been very severe; ocular symptoms slight. There was enlargement at the anterior extremity of the inferior turbinated bone. Nose was occluded at times. Acetic acid failed to reduce the swelling or prevent the attack. Nitric acid was applied, increasing the symptoms for several days. At the end of a week the symptoms disappeared and did not return.

Case 9. September, 1889. Mrs. J. T., 42 years of age. Had hay-fever for the past six summers. Duration of the attack was about six weeks, unless relieved by a change of climate. When she called at my office, the attack had been in progress about one week. Nasal symptoms were most marked. Ocular symptoms were mild. There was vascular enlargement at each anterior area. Acid was applied to these spots three or four times. No symptoms were seen after the first application. There was no recurrence.

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NATURE'S REMEDIES.

By Dr. Edw. R. Campbell, Bellows Falls.

While perhaps it would be eminently proper to term all drugs of whatever character "nature's remedies," for the purposes of this paper I prefer to call by this name such universally diffused substances as air, water, sunshine, diet, etc., while we regard drugs as, in part at least, the product of the chemist's hand.

It would probably be impossible to rely on either alone in some cases, but is it not possible that in these days of polypharmacy and vaunted specifics we are in danger of relying too much on drugs and too little on the so called "vis medicatrix naturæ"? I am also inclined to think that both our habits and prejudices, as well as perhaps self-interest, in some cases, incline us sometimes to pay too little heed to nature's forces and to exaggerate the importance of drugs. We are all well aware that many diseases are self-limited, and as such can neither be absorbed or shortened by medicine. It has been well said by that eminent Boston physician and teacher of a former generation, Dr. James Jackson, "that it is a very narrow and unjust view of the practice of medicine to suppose it to consist altogether in the use of powerful drugs, or of drugs of any kind. Far from it," he adds, "the enlightened physician first considers whether his patient shall take anything. He considers what other modes of relief there are besides pills and draughts. He looks to quiet, diet and regimen."

Dr. Jackson also draws such a vivid word picture between the true physician and quack that I quote his words: "Let it be remembered—and we may address this particularly to the scoffer—that the true physician takes care of his patient without claiming to control the disease in all cases. He does not regard himself as making an exhibition before a company to show his skill: he makes no boast of what he can do. I wish I could say that this is never done by any of our own profession.

"There are those who, directly or indirectly, trumpet forth their skill and success, attributing the recovery of their patients to the remedies they have prescribed and never to the spontaneous efforts of nature. These, whatever titles may be appended to their names, are true quacks. They quack, quack, that they may attract the attention of the passer-by and, while they extol their remedies for the sick and suffering, they are seeking only their own profit and their own glory. The true physician, on the other hand, cannot fail to be modest in his pretensions, for he is aware how his knowledge and power are limited while he feels the magnitude of his task."

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Is it possible, gentlemen, that the profession has so far advanced—for these words were spoken more than a generation ago—that this description of a quack would not apply to any number of our own profession to-day, or can you and I easily point to just such men? But, laying aside the quack, Dr. Jackson says it was his own practice to avoid drugs as much as possible.

Dr. Clark, in his eloquent obituary on our deceased brother, Dr. O. F. Fassett of St. Albans, in whose judgment we all had so much confidence, states his opinion of his own case. It seems that in early life Dr. Fassett was in much danger of becoming a victim of that dread disease, phthisis. He settled in the village of East Hardwick, and Dr. Clarke thus vividly describes his preventive treatment.

"For thirteen years he traveled over the hills and along the streams, studying nature in all her gorgeous beauty, upon the hill-sides, in her coat of green, and the mountain tops in their autumn tints, and listened to the songs of the birds in the gray of the morning until he became a lover of all things grand and beautiful in nature. Here he had pulmonary hæmorrhage that prostrated him for some time, but he told me he thought his journeying in the mountain air contributed largely toward his recovery and warded off that lurking disease, phthisis."

The Doctor, as we all know, lived many years and left the record of a well spent life in every way worthy of emulation. In this connection let us refer to the well-nigh miraculous cures of consumption by the overland journey across the plains in the pre-railroad times. It was then common for consumptives, as a last resort, to take the overland journey in ox-carts, and history reports many of them as returning, if not cured, at least much benefited. One writer thus describes the journey:

"They started in wagons with comfortable covers for use when necessary. The whole life was passed out of doors. The journey was a slow one. The voice was exercised in calling to the oxen. The travelers often walked slowly along behind their wagons, laughing, talking, and singing. After mid-afternoon they made a halt, prepared their suppers, and let their teams forage and rest till morning, when after breakfast they started along. Sometimes they halted for days at favorable places, resting and amusing themselves, or making needed repairs."

It was not so much the climate, in my opinion as it was nature's remedies—fresh air, sunshine, gentle exercise, intermingled with congenial amusement, that kept the patient from dwelling on his own symptoms, that contributed to the cure. I am also confident that the experience of our surgeons in the late rebellion was very favorable to the open air treatment on both diseases and injuries.

Ziemssen, in his able article on "Antipyresis," published last year, thus groups the authors:

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1st. Those extreme hydriaticists who only use the cold bath and reject internal antipyretics.

2d. The moderate hydriaticists who resort to luke-warm baths but reject internal antipyretics.

3d. Those who, according to indication, resort to moderate hydrotherapy and to internal antipyretics.

4th. Those who consider fever a salutary and necessary regulation and only resort to antipyretics when dangerous symptoms or complications ensue.

5th. Those who claim that fever is a necessary phenomenon and therefore reject all antipyresis and pay attention to diet only.

6th. Those who absolutely deny the influence of treatment on the mortality of typhoid fever.

Since writing the above I have read the address in medicine delivered by Dr. N. S. Davis of Chicago, before the American Medical Association at Nashville, and his views are so clearly and positively against the use of large doses of most of the lately discovered and, with some, extremely popular antipyretics that I quote him quite fully. He is also disposed to look with much disfavor on the too prevalent use of alcohol in its various forms in the treatment of disease.

As regards typhoid fever cases, during his connection with the Mercy Hospital for the past twenty years in which a total of more than 1,000 cases were treated without the use of alcoholic remedies, both fermented and distilled, the actual ratio of mortality was only five per cent., or one in twenty cases. He says:

"The administration of the most popular internal antipyretics, antipyrin and antifebrin, was commenced by my colleague in charge of the wards and given a fair trial during the last three years. But the cases so treated resulted in so decided an increase in the ratio of mortality that he abandoned their use in the treatment of this variety of fever." In speaking of pneumonia treated in the wards of the Mercy Hospital during the past ten years, he says: "The average ratio of deaths from this disease has been about twelve per cent. No alcoholic and very little antipyretic remedies have been used in the treatment."

I have read Dr. Davis's address with great interest, am much pleased that a note of warning should be sounded by one so high in authority, against the too prevalent use of the most powerful and popular antipyretics in those dread diseases, typhoid fever and pneumonia. And I firmly believe that that fell destroyer, phthisis, can be best treated by nature's remedies, drugs being used merely as adjuvants to meet indications as they may arise.

Lest I might be misunderstood, I want before closing to affirm my abiding faith in the efficacy of drugs, properly administered: for who of us, who have seen the hot and dry skin moisten under the influence

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of some simple diaphoretic, or the restless and excited child lulled to sleep by the quieting influence of a hypnotic, or the agonizing pain from some accident or disease stilled by the potent action of an analgesic, administered either by the stomach, rectum or hypodermically, can but acknowledge their power for good. But I believe the tendency of the present time, among some of us, is to rely too much upon drugs and too little upon nature's remedies, and that such tendency is detrimental and should be carefully guarded against.

TONSILLITIS.

By Dr. F. T. Kidder, Woodstock.

The tonsils are two glands which occupy the excavation on each side of the base of the tongue, limited by the pillars of the fauces. They are oval shaped bodies, and project into the isthmus of the fauces. They may vary greatly in size, and still present pathological changes. Their object seems to be to serve a double purpose. First, the acinous glands, which make the tonsil. secrete a clear viscid liquid which is destined to lubricate the food, and to assist in its passage through the pillars of the fauces and œsophagus to the stomach. They, however, always contain fluid which is poured forth by the contraction of the muscles of deglutition.

Second. Like the other ductless glands, which they resemble, they modify some of the constituents of the blood, aid in the formation of the white corpuscles, and contribute to the elaboration of the lymph.

Tonsillitis is an acute inflammation of the tonsil or tonsils, which may be superficial or parenchymatous, and may terminate in resolution, suppuration or chronic enlargement. I shall not speak of those conditions of the tonsil which are symptomatic of general disease, or erysipelas, the eruptive fevers and traumatism, but simply those varieties which are classed under the general head of acute tonsillitis, viz: the erythematous, parenchymatous and follicular or lacunal.

The disease is most common in early adult life and is not confined to either sex. Pale, lymphatic children are most apt to have tonsillar inflammation. Cold and dampness as well as an overheated and vitiated atmosphere together with septic influences are among the most common

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of the exciting causes. The symptoms vary according to the form of the disease which is present, from the simple erythematous to the more alarming and painful follicular variety. For acute superficial or erythematous tonsillitis, the first indications are a slight chill, with perhaps, nausea and vomiting, and a slight elevation of temperature; after a few hours, the patient complains of dryness about the throat, followed by more or less pain and difficulty of deglutition. There is generally some cough and expectoration of a stringy mucus, which collects in the throat. The tongue is coated with a white fur, the bowels constipated and the breath foul. The breathing is rapid and the temperature may rise to 102 or 103 degrees. At this time the throat and tonsils will be found red and swollen, and at times may be covered with a grayish exudation. These cases last but a few days, and end in resolution, although after repeated attacks an hypertrophy of the tonsils may result.

Parenchymatous tonsillitis, or an inflammation of the substance of the tonsil, is in the initiatory stage similar to the erythematous variety, and may appear to be nothing but that, at first. After a few days, however, the symptoms increase instead of decreasing in severity; one of the tonsils begins to increase in size, and become much more painful; the swelling extends to the adjacent parts, so that swallowing is almost impossible, and the voice becomes nasal in character or is reduced to a whisper. The inflammation may involve the eustachian tubes, producing pain in the ear, and occasionally acute suppuration of the middle ear. If the disease goes on to suppuration, all the symptoms increase until the abscess is either opened or opens itself. In early life, the formation of an abscess is uncommon, as the disease generally ends in resolution.

In follicular or, as it is more properly called, lacunal tonsillitis, the inflammatory process is located in the crypts of the tonsil, a soft, cheesy deposit being poured out from the follicles and forming a number of small patches corresponding with the number of crypts affected. The clinical importance of this variety is considerable, and it is of this that I wish to speak more in detail. The symptoms from the beginning are much more severe, and it generally runs a more protracted course. Beginning with a chill and all the symptoms of an acute inflammation, the temperature rapidly rises to 103 or 104 degrees with a pulse to correspond; the throat, from a feeling of dryness, grows rapidly worse, the tonsils become inflamed and greatly swollen, and in a few hours are covered with a membranous deposit, formed from the secretion of the follicles of the organ. After a variable period of from 10 to 14 days, the symptoms begin to subside, leaving however, a notable degree of general depression of the system for many days, as great as many times follows diphtheria; together with paralysis of the soft palate and pharynx.

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The main source of anxiety in the diagnosis, in the early stages of the disease, is the danger of confounding it with diphtheria, which, from the severity and character of the symptoms it strongly resembles. I have no doubt many cases of so-called diphtheria are nothing more nor less than lacunal tonsillitis. Usually the disease can be distinguished from diphtheria by the character of the deposit in the tonsil, which in tonsillitis is easily removable by a brush or probe and no ulceration is found beneath it, while in diphtheria the deposit in the throat is more in the form of a membrane, of a leathery appearance; is more tenacious and on removal leaves a raw and inflamed spot behind it. But in those unusually severe cases where there is a doubt as to the character of the deposit, if on removal it returns with all its original characteristics in the course of 12 hours, the disease is undoubtedly true diphtheria. In tonsillitis also the membrane is confined to the surface of the tonsil, while in diphtheria it is rare not to see patches on other parts of the throat at the same time.

One other and perhaps the chief reason for confounding the two diseases is the evident lack of belief in the couragiousness of lacunal tonsillitis.

In the summer of 1886 my attention was called to the fact that it might be contagious, since which time, from the few cases that have come under my observation, my belief in the septic origin of many cases of it have been strengthened. In August, 1886 I was called to see a man suffering from a well marked attack of lacunal tonsillitis, which run its course but not so very severe; he lived on a farm, with good drainage about the house and good sanitary surroundings. At this time I never had the slightest trouble with my throat and was in a perfectly healthy condition, so far as I knew. In nine days I began to feel that something was the trouble with me and especially with my throat. The following day had a distinct chill, followed by a rapid rise in temperature and fast increasing soreness of the throat, which developed into follicular tonsillitis, so that I was confined to the house about ten days.

In January, 1887, I was called to see a child who was a member of a family consisting of seven persons. I found the child sick with tonsillitis and the next day a second child came down with the same disease. Upon inquiry I found that an aunt who lived in the family had been sick about ten days before with what she termed a sore throat, whose throat the mother said had just the same appearance as the throats of the children. In about ten days from the time these two were taken sick three more came down with the same disease, making six out of the family of seven that suffered from tonsillitis. This was a well-to-do family, and the drainage and sanitary condition of the house were as good as it could be in a country village. I did not see another case of the disease until the following winter when I again contracted it myself, coming down in about the same time and in the same manner as before.

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The past winter I have had three cases, two of which were mother and son, and the third a young lady who called to see them while sick. She was taken in 7 or 8 days from the time she made the call. Dr. Beverly Robinson says in regard to it:

"While it is true that many cases of follicular tonsillitis cannot be definitely and distinctly traced to a septic cause, I am more and more convinced that the influence which underlies such evident derangement of the prima via, accompanied by chills and anorexia is due to specific germs or entities present in the body. If we do not find them I prefer to think that our means of research are not capable of demonstrating them.

* * * * *

The resemblance between the symptoms of this disease and those of other diseases, whose pathogenic micro-organism is known, leads me to conclude from analogy that a more or less similar germ is present here also."

I am well aware that tonsillitis in any form has not generally been classed among the contagious diseases, and have been unable to find any record of cases kept for the purpose of establishing or denying the fact of its being caused by a specific germ, or any suggestion that such might be the case, except in Keating's Cyclopedia of Diseases of Children, in an article by Dr. Robinson, part of which I have quoted. Of course we cannot reason from the particular to the general, and the few cases that I have been able to collect do not by any means establish the fact, nor do they go far to prove the contagiousness of tonsillitis. It is true there might have been no contagion about these few cases, and they might have happened to appear in such regular order from being produced in one by the same causes that produced it in the other; nevertheless in these days when a germ is found for so many diseases that were formerly not considered contagious, why is not possible and even probable that tonsillitis may have a microbe of its own which is capable of being transmitted from one person to another under favorable conditions?

In regard to treatment I will say a few words. Guaiac is the remedy par-excellence which is recommended to abort an attack. I have used it with good results in erythematous tonsillitis, but have never been able to prevent an attack of follicular tonsillitis by its use. In any case it must needs be given in the earliest stages of the disease. Tincture of iron is probably used more than any other remedy. I give it with glycerine, two drachms of iron in two ounces of glycerine, giving a teaspoonful every two hours. It seems to have a better effect given in this way than any other. I am not a believer in gargles of any kind; for the reason that the irritation of using the muscles of the throat as is necessary is a greater disadvantage than the advantage gained by the remedies. Sprays and inhalations of steam give some relief and are of

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decided benefit. They certainly are comforting to the patient, whether they tend to abort the attack or not. In a severe case, sedatives are required to give needed rest, and should be administered. Particular symptoms should be treated as each case requires. And one has the satisfaction of feeling that, with proper care, recovery is almost sure to follow.

PROPHYLAXIS OF TUBERCULOSIS.

By C. W. Strobell, M. D., Middletown Springs.

Tuberculosis, according to reliable statistics, is responsible for one-seventh of all the deaths that annually occur in this country. It is a disease before which we, as physicians, have thus far stood well-nigh powerless, the subject's doom being sealed in our minds simultaneously with the confirmation of the diagnosis. It is in vain that alleged specifics and much-vaunted discoveries are tried. In vain have gaseous enemata, oxygen inhalations, superheated air, and nauseous fish-oil flashed spasmodically upon our therapeutic horizon, momentarily lighting up the gloom with a fitful glare, only to plunge us into deeper therapeutic darkness.

In order that we may be thoroughly in sympathy with our subject, and fully appreciate the rapid and salutary changes which the theories concerning the pathology of tuberculosis have undergone, let us briefly review its literature since 1865, previously to which investigators were groping in a dense theoretical fog. Villemin, in 1865, startled the medical world by the artificial production of tuberculosis, exciting renewed and intense interest in the pathology of the disease. He inoculated animals by inserting tuberculosis matter beneath the skin through a small incision. One month later it was found that, with few exceptions, general tuberculosis had set in. Artificial tuberculosis, it was ascertained, could be easily generated in rabbits, guinea-pigs, oxen, sheep, goats, and monkeys. Cats and dogs proved not very susceptible, and in the case of a cock and a dove the experiments entirely failed. Villemin also produced tuberculous infection by injecting a watery suspension of tubercle into the bronchi. These researches constitute the first link of the chain of brilliant experiments that are rapidly guiding us to a solution of this problem in pathology.

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With regard to the material inoculated in later experiments Gee* says:

"Villemin used fresh tubercle, but soon afterward Andrew Clark and Waldenburg, succeeded in rendering rabbits tubercular by inoculating them with materials other than tubercle. It was next found that not only animal tissue, but even the vegetable, such as a cotton seton, or a piece of cork, would set up tuberculosis. And lastly, the fact was discovered that a simple wound into which nothing was inserted would suffice to generate tubercle in rabbits, guinea-pigs, and certain other animals. However, Sanderson, in 1868, showed that of all the means of producing artificial tubercle by inoculation, none is more certain or more active than the material taken from the diseased glands of a living animal already infected. The dose required is almost infinitesimal. If a diseased gland is squeezed into a little distilled water in a capsule, and the slightly turbid liquid injected, results are certain. Both Sanderson and Wilson Fox, in 1868, discovered that when non-tubercular matters were inoculated they become encapsuled by cheesy matter formed beneath the skin, so that the difficulty of explaining the subsequent tuberculosis is not so great as it seems at first. The tubercles follow, not the material inoculated, but the inflammatory products which surround it. Cohnheim inferred that the infectious matter was always caseous pus. But the inflammatory products around the wound of inoculation are not always cheesy, although they are usually so.

"Therefore the infectious virus which excites the general tuberculosis is not introduced from without, but is generated by the animal itself. The animal must possess a tubercular diathesis, and if this is present any kind of inflammation, set up in any way, may call forth tuberculosis."

This summing up of the status of the case in 1884 is interesting when viewed in the light of recent developments, for close upon the heels of these investigators came Klebs, Aufrecht, and Baumgarten, with the theory of the bacillary form of the virus. Schiller and Toussaint described it as a micrococcus.

The announcement of the discovery of the specific bacillus of tuberculosis by Koch was at first received with incredulity, and in some quarters with prejudice, which, however, disappeared as the confirmatory evidences multiplied, until to-day there seems to be no reason to doubt the specificity of Koch's bacillus, although as yet the precise action or manner of infection does not seem clear, i. e., does the bacillus mechanically infect by its presence, as in the case of a cotton seton and various organic or inorganic materials, or by its secretions? This question is of vast importance regarding the therapeutics of the disease, for, could the view be proven (and in my opinion it is the true solution) that the secretion of the bacillus is the virus, then there opens before us a glorious

* Quain's Dictionary of Medicine, 1884.

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prospect of being able to cure tuberculosis by neutralizing the virus. Already has Koch's discovery borne practical fruit in the prophylactic measures we are enabled to apply intelligently.

The pleura, peritoneum, arachnoid, and even the pericardium may be the seat of miliary tuberculosis; but it is generally noted that the lungs are the organs first attacked, and that it is extremely rare for tubercle to exist in any organ without being also present in the lungs.

The *Medical World*, June, 1890, states that:

"Tubercle bacilli are found in phthisis tuberculosis, scrofula, lupus, and pearl disease. In enteric disease they can be detected in the dejecta; in tubercular disease of the urinary apparatus, in urine; in tubercular meningitis, in the nasal secretion; in phthisis they infest the expired air, the sputa, the secretions of laryngeal and pharyngeal ulcers, and the pus of anal fistulæ. In scrofula they swarm in the pus of diseased joints, and in the discharges from scrofulous ears. They have also been frequently discovered in lupus vulgaris, which is now considered by many pathologists to be a tuberculosis of the skin. In all these instances they are capable of cultivation; and many of the lower animals can be inoculated, which tends to prove that the inception of tuberculosis depends upon the passage of the living bacillus from one organism to another, the peculiar pathognomonic changes being consequent upon either its mechanical presence or the virulent character of its secretions."

The next question that concerns us is, What is the primal source of the bacillus of tuberculosis? Investigations thus far point very strongly to the bovine species as responsible for the disease in the human family. As evidence of this origin we will cite the case of one of our foundling homes, where an endemic of acute miliary tuberculosis broke out with great fatality. It was at length suspected that the dairy attached to the institution was the source of contagion. Investigation revealed that three-fourths of the cows were infected with tuberculosis. The milk was condemned as unfit for the use of the infants, and given to the swine, of which there were twenty-five or thirty. It was observed that with the withdrawal of this milk a marked improvement began in the health of the infants, which continued so far as tuberculosis was concerned. But there is a sequel to this, namely, that the swine that were given the rejected milk sickened, emaciated, and finally died. The order was given to kill all the cattle and swine on the premises, which was followed by thorough disinfection and a complete restocking.

Although innumerable cases may be cited of the infection of certain of the lower animals by man through the ingestion of his excretions in various forms, there is not one instance, so far as I know, of such an infection of an animal of the bovine species, which is probably due to the purity of their food. So that in the latter animals the bacillus seems to arise spontaneously.

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Admitting, then, the bovine theory of the origin of tuberculosis, let us briefly enumerate the methods of infection beginning with the originators. Infection from the cow may be from either the meat, the milk, or the sputa. By the ingestion of tuberculous meat and milk man is infected, provided that a proper soil exists. By hereditary predisposition, and the ingestion of tuberculous milk and sputa, calves are infected, and propagate the disease in the herd.

Infection from man to man ranks next in importance, and this is either directly by the ingestion of sputa; or indirectly by the use of tuberculous pork and poultry. To the omniverous habits of our barnyard fowls and of swine, is due the fact that they are very susceptible to this disease.

The house-fly, too, is by no means innocent, as shown by the experiments of Drs. Spillman and Houshalter.* Flies that had been seen to enter spittoons containing the sputa of phthisical patients were caught and placed in a bell-jar. On the following day several of them were dead. An examination of the abdominal contents and the excrement of these flies showed the presence of many tubercle bacilli. The authors point out the wide dissemination of the disease which may take place in this manner. It was clearly shown by Professor Dixon, of the University of Pennsylvania, that calves and pigs fed upon milk infected with tubercle bacilli, became tuberculous. The gastric secretions of the dog are said to be a greater defence against the successful invasion of the bacilli than are the similar secretions of man, but a healthy dog which Professor Dixon fed for several days on the meat of a tuberculous cow soon began to lose flesh, and died a few weeks later of tuberculosis.

Dr. Henry Behrens, a noted Hebrew physician and scientist of London, regards the freedom of the Jewish people from phthisis as due to the religious rules concerning the choice and killing of cattle and the sale of meat. Dr. Behrends† writes that of 13,116 beeves slaughtered for the Hebrew trade in London in six months, only 6,973 came up to the peculiar Jewish requirements, and that the average rejections for five years had been 40 per cent. But the rejected beeves are often used by the Christian butchers. He also makes the astounding statements that in a large practice of over thirty years he has never met with a case of consumption among the members of the Jewish faith, and that other Hebrew physicians have had a similar experience.

The prevention of the disease seems possible by two simple measures. First, the devitalization of the sputum of consumptives, for the desiccated tubercle bacillus retains its vitality. Second, the legal inspection of all dairies at regularly stated periods, and the slaughtering of cattle for food purposes under the supervision of a regularly qualified and legally

*New York Medical Record, November 12, 1887.

†Medical World, February, 1890.

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appointed veterinarian, who shall issue a certificate upon "proof-meat," and be held responsible for the wholesomeness of such meat.

As regards the sputum, devitalization should be secured almost immediately after being expectorated. Destruction by fire is the most convenient, safe, and certain method of devitalization. The patient should expectorate upon pieces of newspaper, which, upon receiving the sputum, are twisted and dropped into a receiver, which should be emptied into the fire as often as every three hours; or the papers may be immediately dropped into the fire. In view of the results of the experiments with the house-fly referred to above, it is unsafe to employ a sputum-cup during summer, or at any time in fact, as its contents are not, as a rule, thrown into the fire, which is the devitalizer *par excellence*. The sputum-cup is usually emptied into the slop-jar or out of the window, and in places where the bacillus has the best opportunity to find a favorable soil for its propagation. Kissing must be interdicted, as the bacillus may be deposited upon the lips and face, thus eventually finding access to the system.

Bovine tuberculosis when occurring in our Vermont herds is never noticed by the law, as in pleuro-pneumonia, but only by the farmer when he observes that a certain animal "is not doing well," is "off its feed," or "running down." What is his course in such a case? Invariably the animal is "stuffed" and given only limited exercise until sufficiently presentable either to sell to the butcher, or to slaughter at home, the meat being peddled (in the majority of cases by wholly innocent farmers) to unsuspecting consumers. The farmer will not allow any stock to "run down" on his hands if he can prevent it; and, moreover, who of the consumers is to tell whether the cervical glands were enlarged or the lungs or other viscera tuberculous, since these parts are not, as a rule, offered for sale?

It has been said that cooking will devitalize the bacilli, but this was disproved by the experiments of Professor Gerlach, who cooked meat known to be tuberculous from fifteen to thirty minutes, fed it to animals, and produced consumption in two-thirds of all those experimented upon. I have personal knowledge of certain animals with swollen cervical glands, scrofulous joints, and emaciated frames that are being milked daily, part of the milk being consumed by the family, the remainder going to cheese factories, where, according to Professor Gerlach, the degree of heat to which the milk is subjected in the cheese-making process is not sufficient to devitalize the bacillus. Then as to the milk we drink: who, in the absence of official inspection, is to tell us whether it is sound or not? Surely not the farmer, who is ignorant of the existence of this germ. It may be said that the milk can be sterilized by boiling, but here again we are doomed to disappointment, for Professor Bollinger, of Munich, has demonstrated that tuberculous milk even when boiled will produce consumption.

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What abominations are sold in the form of canned goods can only be surmised, as the Government makes no provision for their supervision. But the country is waking up to the importance of this question. The Government spends $500,000 per annum in the work of exterminating pleuro-pneumonia in our herds, but not because the disease can be transmitted to man. A much larger sum could be profitably expended in the extermination of tuberculosis, for it is clear that, in many cases, this disease which kills one-seventh of the human race, is carried to man in infected meat and milk. Not long ago, in Oregon, all the cows in a noted and valuable herd were killed, because they either had tuberculosis or had been exposed to the disease. This action of Oregon is in the right direction, and should be followed by all the States. The great remedy for tuberculosis is to instruct and urge our Board of Cattle Commissioners (who have the requisite power granted them by the statutes) to ferret out all cases of tuberculosis among our herds with a view to its extermination, just as is done with pleuro-pneumonia. And, as already mentioned, the slaughtering of all animals for food purposes should be under the supervision of a veterinary pathologist. In connection with this the methods of inspection practiced by the Jews is of interest. According to Behrens:

"Kosher meat, as the passed-inspection Hebrew meat is called, is thus prepared under the inspection of the proper official, often the rabbi himself, certainly one familiar with pathological appearances. A perfectly sound and presumably healthy animal is selected and thrown, and a keen, sword-like knife, three feet long, is pushed once across the throat, and then drawn forcibly back toward the operator, the animal then being hung up by the heels until thoroughly drained of blood. That oft-quoted jugular vein is, of course, severed, and so are the large arteries, by those terrible cuts, for the knife goes to the bone. Every organ is then carefully examined for traces of disease, especial attention being paid to the lungs, which must be non-adherent to the chest or to each other in any lobe, and must be fully inflated, then cut into and examined for foci of disease. The larger veins and arteries must then be dissected from the meat, for it is along them that abscesses are usually found, if found at all. If a defect is found at any of these points the meat is rejected as unsuitable for Jewish use. Poultry and fish have to pass a rigid inspection, and there are other stringent regulations regarding the treatment and cooking of even the passed-inspection food articles."

Associating this with the above-quoted forceful exposition of the immunity from consumption of the adherents of the Jewish faith, we are impressed with the importance of this matter.

This ancient custom of the Jews must be appropriated by us for our own preservation, and to insure the perpetuity of our race.

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The advocacy by the *British Medical Journal* of a wider use of goat's milk is timely, and of great importance as regards infant-feeding, especially as cow's milk in cities is seldom free from a suspicion of infection or adulteration. The goat, on the other hand, does not have, or very rarely has, tuberculosis, is easily kept, and is a vigorous and healthy animal, thriving under almost any condition, while, as physiology teaches, its milk is nearest, in its several constituent properties, to human milk, therefore the best substitute.

In conclusion, let us urge our representatives to arouse the Government to act in this vital matter, so that as speedily as possible it shall guarantee that our meat is "Kosher."

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Seventy-Seventh Annual Meeting

OF THE

Vermont State Medical Society,

HELD IN MONTPELIER OCTOBER 9–10, 1890.

The Society was called to order in the "New Court Room," State House, on Thursday, October 9th, at 10.15 A. M., by the President, Dr. H. S. Brown, of St. Johnsbury.

Prayer was offered by the Rev. G. W. Gallager, of Montpelier.

The records of the last meeting were read and approved.

It was moved by Dr. D. C. Hawley, and carried, that the Chair appoint a nominating committee of five members. Accordingly the President chose the following as such committee: H. D. Holton, O. W. Sherwin, J. M. Clarke, George Dunsmore, S. T. Brooks.

Dr. Edw. R. Campbell, of Bellows Falls, reported as delegate to the New Hampshire Medical Society.

Dr. W. H. Vincent, of Orwell, delegate to the Rhode Island Medical Society, presented the following report:

As a delegate from this Society I attended the Rhode Island State Medical Society, held at Providence June 12, 1890.

The meeting was held at the Providence Art Club Rooms, and was called to order at 10 A. M.

The Society holds four meetings a year, and this Annual Meeting is devoted principally to the election of officers, appointment of committees and the President's address,—the other meetings being devoted to papers on medical subjects,—this being the 79th Annual Meeting, with John W. Mitchell as President.

The Society consists of two hundred and six active members. The applicants for membership are required to pass an examination, and 17 new members successfully passed and were admitted at this meeting.

The annual fee is $5, and the financial report showed a balance of $801.12 in the treasury. The Society has a Medical Library of 8413 volumes. The same officers were elected for the ensuing year. The next meeting was voted to be held at Providence.

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A committee of five were appointed to appear before the General Assembly to present a bill which shall provide for the control of the practice in the State.

The President's address consisted of a "Historical account of the Rhode Island State Medical Society,"—showing a membership of 49 at the time of organization April 22, 1812,—the Society has grown to 206 members. During the past five years 57 new members have been admitted. He then dwelt at length on the life of Amos Troupe, the first President of the Society, and presented a life-size picture of the same.

After the address the Society adjourned to Tillinghast's parlors for the annual dinner. About 125 members and invited guests were present, and a more social and entertaining company could not well be assembled. Speeches were made by President Andrews, of Brown's University, who responded to the toast of a University education as a factor in the development of the medical profession.

Mr. Arnold Green, one of Providence's brightest lawyers, responded to the toast of the advantage to be gained by the Legislative control of medicine.

There was a motion made at our last annual meeting to do away with the semi-annual meeting. I think this a mistake; and if we would make our meetings more practical—report more cases that are interesting and peculiar—we might find two meetings a year interesting and instructive. I think that every new member should at least be required to present his diploma to the Counselors, and be vouched for by at least two members of this Society that he is a regular practitioner of good standing; and, that the State should have a Board to regulate or control the practice of medicine. I was pleased to see how strict Rhode Island is in the above matter.

Greetings were given the Delegates from Massachusetts and Vermont. There had never been a delegate from Vermont to this Society, and every thing was done to make my visit pleasant.

Dr. H. D. Holton reported as follows for the Board of License Censors:

The Censors elected to grant Licenses to practice under the laws of the State beg leave to report that they have issued licenses to twenty eight. In all cases they have first examined the Diplomas, and satisfied themselves that they were genuine. To some this has seemed an unnecessary requirement, especially when they have been vouched for by some member of the Society. But in a matter of so much importance your committee feel that too much care can not be exercised, and that a general rule which applies to all is desirable.

The following are the names of those to whom licenses were granted, with the name of the institution from which they received their Diploma:

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By H. R. Wilder: E. H. Bushnell, U. V. M., 1889.
Clarence E. Allen, McGill U., P. Q., 1883.
F. S. Dillingham, U. V. M., 1889.
Louis A. Maynard, U. V. M., 1889.
J. N. Jenne, U. V. M.
Adolphus A. Whippen, Missouri M. Col., St. Louis.
C. S. Jenne, U. V. M., 1890.
E. A. Bates, U. V. M., 1874.
E. A. Moody, Albany Medical College, 1885.

By J. H. Jackson. Henry A. Ward, U. V. M., 1887.
W. L. Goodale, U. V. M., 1888.
C. F. Camp, U. V. M., 1880.
C. W. Strobell, U. V. M., 1882.
E. B. Watrous, U. V. M., 1887.
L. F. Brigham, Dartmouth, 1886.
B. W. Braley, U. V. M., 1876.
F. A. Falby, U. V. M., 1888.
W. D. Reed, Queen's Univ., Canada.
W. D. Lamb, U. V. M., 1880.
H. L. Gale, U. V. M., 1886.
J. W. Jackson, U. V. M., 1890.

By H. D. Holton. Elizabeth C. Malleson, Womans' Medical College, Philadelphia, 1887.
William T. Patch, University New York, 1890.
J. B. Woodhull, University New York, 1884.
Rollo Miner Chase, Baltimore Med. College, 1890.
Daniel L. Burnett, Baltimore Med. College, 1890.
Alvin Henry Wright, U. V. M., 1890.
Clarence B. Wilson, University Michigan, 1888.

HENRY D. HOLTON,
J. HENRY JACKSON,
H. R. WILDER,
} License Censors.

Report of Delegates to Medical Department U. V. M.

To the President and Members of the Vermont State Medical Society:

Gentlemen—As delegates of the Society to attend the final examination of students of the Medical Department of our University, who were to succeed to the degree of "Doctor in Medicine," we would respectfully report:

That we visited the College and witnessed the examination of sixty-eight students, who were applicants for the degree, in Anatomy, Materia Medica, Chemistry, Theory and Practice, and in Obstetrics. The examinations in Physiology and Surgery had already been concluded the week before, as the Professors, Jackson and Phelps, were anxious to sail on their voyage to the International Medical Congress at Berlin.

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That, of the sixty-eight candidates examined, twenty were rejected.

That all the examinations witnessed were very fair, thorough and impartial, giving evidence of elaborate and difficult instruction. Abundant time was given each student in his examination, and the readiness and correctness of many of the answers was evidence of both close study and superior instruction.

That our medical school, together with our present Faculty, are entitled to the confidence and support of the profession, both in our own State, and among our sister States, to maintain the present high standard of acquirements in the different branches included in the medical curriculum.

That we notice that the preliminary education of most of this class is superior to that of the average, and it is hoped that the day is not far distant when *this* school will require a more careful and preliminary examination, thus keeping pace with some of our more flourishing city schools in the attempt to reach the zenith of ambition in American Medicine. This hope has been realized by the action of the Faculty in requiring an examination for entrance.

That we are pleased to note that the clinical advantages—including a wide scope of study and material—are becoming more extensive and interesting.

That having carefully witnessed these final examinations—and surveyed the advantages and improvements attendent upon the medical department of the U. V. M—we feel privileged in saying that it *deserves* success, and to this end we would respectfully and cordially recommend it and its advantages to the profession, and those interested in, or who are contemplating the study of medicine, believing that our State—like your delegates—should take great pride in its present position, and in its future prospects.

C. F. BRANCH, }
S. S. CLARK, } Delegates.

Dr. Elmer E. Moore, delegate from the Rhode Island Medical Society, presented credentials, and was introduced to the Society and invited to participate in its deliberations.

Dr. Moore responded pleasantly, and tendered the greetings of the Rhode Island Society.

A letter from Dr. A. E. Fields, of Barre, was read by the Secretary, asking for a dismissal from the Society. On motion Dr. Fields was made an honorary member of the Society.

Dr. J. H. Jackson of Barre, reported as delegate to the British Medical Society, as follows:

MR. PRESIDENT:—

Your delegate to the fifty-eighth annual meeting of the British Medical Association has the honor to present the following report:

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The meeting was held in Birmingham, England, July 29, 30, 31, and August 1st, 1890; and its programme was a pleasing combination of addresses, receptions, excursions, garden-parties, discussions, ten minute speeches and reports of officers and committees.

One of the reports showed a membership of more than thirteen thousand, and another gave the fact that two hundred thousand dollars are now in the treasury.

His Grace, the Archbishop of Canterbury, preached the annual sermon to the members, in Saint Martin's Church, to which they and the delegates were admitted by ticket. The subject chosen was "The Honor of the Physician," and calling him the servant and interpreter of nature. The clergyman referred to the medical man as illustrating in his life and work the law of kindness, the law of parity, and the law of reverence.

President Wade, in his address on "Medical Education," considered among other things, the advantages and errors of writing prescriptions in Latin, as well as the possibility of an equal discipline of the student's mind, by substituting for a dead language, one which should be of life-long utility to the practitioner.

Sir Walter Foster, M. D., M. P., in his thoughtful address, spoke of the labors of Koch and Pasteur, Klein and Farnkel, as they search out the secrets of nature, identify and isolate the bacillus of tubercle and rabies, and dissipate, day by day, the mystery that has for ages surrounded these maladies. The doctrine of a living contagium as the cause of each specific disease has led to the greatest of surgical triumphs in the treatment of wounds, and made the name of JOSEPH LISTER immortal.

In his "Address in Surgery," Mr. Lawson Tait made an earnest plea that the training of a surgeon shall be more practical. The ground-work must be a complete knowledge of Anatomy, so far as its facts would aid in appreciating the results of an injury, or a displacement, or a new growth. And these must be so learned that they can never be forgotten. Then he would educate the student's hands, in the shop of the carpenter or blacksmith, if necessary, so that his first use of the saw should not be on a human leg, but by a knowledge of practical mechanics he would be able to *make* a long splint as well as to put it on.

In speaking of the practice of surgery, Mr. Tait said that anesthesia has been to surgery what steam has been to commerce, it has revolutionized everything connected with the art. This is well illustrated in ophthalmology, and especially well shown in abdominal surgery. The great advance in the treatment of intra peritoneal tumors would have been an absolute impossibility without the aid of anæsthetics,

Quite a sensation was caused when Mr. Tait mentioned the theory of the antiseptic accoucheur, and said that Semelweiss literally died for this theory more than thirty years ago. He told the doctors of Vienna that their puerperal women were poisoned by filth. "Wash your hands,"

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he cried, "and the women will not die," and he was ruined for his frankness. But today the world knows he was right,

Dr. Broadbent, of London, in his "Address on Therapeutics" would include in the term all the agents which attempt to adjust the body to its environment. Even acute disease is a process by which the organism does thus endeavor to adjust itself. The excessive heat of fever may be one way of protection, but lowering the temperature does not always cure. The few drugs we have learned to depend upon, need much observation in regard to their action, and the insensate rage for new drugs is absolutely fatal to the greatest success of therapeutics. The test for a weak physician is a constant running to drugs, and a fondness for those most novel in the entire store of the apothecary.

Dr. Playfair considers the use of ergot, prior to the expulsion of the placenta, unnecessary, and its administration practically obsolete. He gives twenty grains of chloral hydrate to relieve the rigid cervix, to be repeated as necessary; and strongly recommends pressure upon the uterus, through the abdominal wall, until the head presses upon the perinuem, at which time he advises the use of chloroform to bring nepenthe.

Dr. Drysdale, of London, in a discussion of Functional Disorders of the Heart, suggested dyspepsia as a very common cause, and more than likely, excessive sexual indulgence, but above all, these disturbances are produced by overdoses of nicotine, tea, coffee, and alcohol. "How can physicians who know so well the evils resulting from the use of tobacco, continue the habit of smoking cigars, cigarettes, or even pipes of strong Virginia tobacco." The vile practice of chewing was mentioned as a possible custom among the lowest classes of Europeans, but never indulged in by any who expect to be considered gentlemen.

Dr. Haig presented some original ideas on the "Retention of Uric Acid." He considers many functional heart disturbances, attacks of epilepsy, gout and rheumatism, hysteria, melancholia, and resulting suicides, as due to this substance in excess in the liver, spleen and joints. The suicides following the influenza epidemic, and the greater prevalence of these maladies in summer than in winter, he attributes to the more scanty excretion of the poison in summer's heat than in the colder months.

Great faith was placed in the use of vapor baths, and the salicylate of soda. In headaches from this cause he first gives opium to relieve pain, and then the salicylate.

Mr. Lawson Tait reported 219 cases of Operation for removal of the Appendages for the treatment of Uterine Myoma, from 1883 to 1888. The mortality was 4., or 1.82 per cent. The tumor itself seldom needs removal unless pressing on organs and causing disturbance. It shrinks in size after the operation.

The first reception to the members and delegates was given by the Mayor of Birmingham, and was a pleasant social event.

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The annual association dinner occupied another evening, and the President of Mason college and Mrs. Lawson Tait gave the closing reception, on Friday.

Mr. and Mrs. J. E. Wilson, Mrs. President Wade, and Sir Walter and Lady Foster entertained consecutively by pleasant garden parties in the afternoons of each day. Excursions were made to Litchfield to visit the Cathedral, to Droitwech, to view the baths and saltworks, to Dudley Castle, to Stratford-on-Avon, and to Coventry.

Admission was granted to clubs, public institutions and manufactories, and all were warmly welcomed to museums, art galleries and schools for the blind and the deaf and dumb. If your representative failed to visit all the places he has mentioned, or to accept all the invitations so courteously extended, he must give as an excuse that there are only twenty-four hours in the day in England as at home, and that but three days intervened between this meeting and the beginning of Berlin's Medical Congress.

The credentials issued by our Secretary and stamped with the seal of this Society gave to your delegate admission to every meeting, and an invitation to every social entertainment. If any American was otherwise received, it is more than probable that he had neglected to carry suitable papers to prove his right to the position of either delegate or visiting member.

Our English cousins are noted for their courtesy and hospitality, and never was this more apparent than at the recent meeting in Birmingham.

Kindly, frank, generous and approachable, we will welcome any of them to a seat at our table, and a share of our more modest, but no less joyful, annual feast. For this is home.

Dr. Henry Janes read a touching obituary of Dr. C. M. Chandler, late of Montpelier.

Dr. S. N. Welsh, of Sutton, N. H., delegate from the New Hampshire Medical Society, presented credentials, was welcomed by the President, and introduced to the Society. Dr. Welch made a pleasant response, in which he spoke in feeling and eulogistic terms of the late Dr. Chandler.

Dr. E. W. Shipman, of Vergennes, read a paper entitled, "The Promiscuous Use of Opium in Vermont."

The paper was discussed by Drs. C. C. Smith, of Gaysville, H. R. Wilder, of Swanton, and Henry Janes, of Waterbury. The latter said more deaths were caused in the United States annually by opium, and especially soothing syrup, than by the use of liquor. The subject was further discussed by Dr. Davenport, of East Randolph, and S. N. Welch, of New Hampshire.

Adjourned until 2 P. M.

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AFTERNOON SESSION.

Called to order by the President at 2.15 o'clock.

The following, introduced at the last annual meeting, by Dr. D. G. Kemp, was brought up for action:

Resolved, That the following words in Art. III of the Constitution be stricken out, "and a semi-annual meeting at such place as the Society shall direct, on the last Thursday and Friday in June," (thereby amending the constitution and discontinuing the semi-annual meeting).

After some discussion the resolution was passed.

Dr. A. P. Grinnell, of Burlington, spoke at length on the subject of "Pneumonia."

Dr. J. C. Rutherford, of Burlington, read a paper on "The Utero-Vaginal Angle and its Influence on the Mechanism of Labor." Discussed Dr. by J. N. Janes.

"Ossific Deposits in the Substance of the Gall Bladder," was the title of a paper read by Dr. S. T. Brooks, of St. Johnsbury.

Dr. M. R. Crain, of Rutland, presented a paper entitled, "The Report of Three Cases of Perilyphilitic Abscess Treated by Aspiration and Washing Out the Cavity with a Warm Solution of Carbolic Acid."

A paper on "Puerperal Fever" was presented by Dr. Geo. Dunsmore, of St. Albans. Discussion followed by Dr. J. H. Hamilton, of Richford, and Dr. H. O. Bartlett, of Milton.

The Tresurer, Dr. D. G. Kemp, presented his annual report, showing a balance of $362.07 in the treasury on Oct. 1, 1890:

TREASURER'S REPORT.

Vermont Medical Society in account with D. G. Kemp, Treasurer.

CREDIT.

By cash in Treasury, Oct. 1, 1889	$332.87
" Dues received during year ending Oct. 1, 1890	216.00
" Cash from Bullard and Shed	5.00
" Dues received at Semi-Annual meeting	18.00
Interest	13.28
	$585.15

Oct. 1, 1890. DEBIT.

To paid Secretary's Bill	$ 51.35	
" " Expenses of Banquet at Burlington	30.00	
" " Printing Transactions	128.23	
" " Postage and Printing	13.50	
		$223.08
Balance in Treasury, Oct. 1, 1890		$362.07

The report, on motion, was accepted.

Adjourned until 8 o'clock P. M.

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EVENING SESSION.

The Society was called to order by the Secretary.

The annual address was delivered by the President, H. S. Brown, M. D., of St. Johnsbury.

PRESIDENT'S ADDRESS.

DR. H. S. BROWNE, ST. JOHNSBURY, VT.

Gentlemen of the Vermont Medical Society:—

God in his kindly providence has permitted us once more to assemble upon this, our anniversary occasion, and in accordance with the usual custom, I am called upon to address you.

I proceed to this duty with a degree of embarrassment that a quarter of a century's connection with you does not in the least diminish. We, I mean those of us who are wholly devoted to the laborious duties incident to the practice of our profession in the country, are not often called upon to publicly address our fellows. Our attention and studies, to such an extent, are devoted to the means best adapted to the relief of the sick and the comfort of the dying, that I think it may truthfully be said that no occupation in life so thoroughly unfits one for this duty, as the daily life of self-abnegation lived by every faithful, busy, country doctor. Could we write out and give to the public the interesting and remarkable incidents that are of almost daily occurrence with us, could we violate the sacred trusts so frequently committed to our charge, we could entertain for many an hour even a mixed audience. To write an acceptable address requires a large amount of leisure, quiet study, peculiar adaptation, practice, and an acquired fondness, all of which only comes by repeated effort in this direction.

We go to our patients when caution is totally disarmed by affliction. We go when domestic and mental troubles are the sources from which springs our calls, many of which would furnish facts in abundance for occasions like this, were we not in honor bound to preserve sacred and inviolate everything that would in the least degree disturb the comfort and happiness of our patrons.

It has been said that "the physician *dwells* with those who are hovering on the borders of eternity. He is ever among the sick and dying, and the lamentations of the bereaved are continually falling upon his ear; he keeps watch and ward over man's mortality," and thereby shortens up the span allotted to each and every one of us.

I will not weary you in this half hour allotted to me by a profitless comparison of ancient with modern medicine, but will ask your kind indulgence in the relation of a few interesting personal experiences in the practice of medicine and surgery.

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Having entered the profession, as I supposed, well equipped, with a confidence in my own ability to win success, which to a greater or less degree is common to every young man who enters the profession, at twenty-two years of age.

Once in practice, I had not long to wait. I was very soon called to a case of a fracture of the olecranon process of the ulna. The only one I ever saw. The patient was about five miles away, the call very urgent, no time for consulting authorities; the messenger had said however that there was a broken arm, near the elbow joint. With many misgivings and a vague impression that all fractures and dislocations about the elbow joint should be treated in the rectangular position, I started out. The patient was found suffering great pain; and heat, redness and swelling of the joint were all present in a marked degree. The displaced process plainly felt high above its normal position. It was clearly evident that *something surgical* must be done, and that, at *once*, in order to maintain my standing in the case. Upon the theory that it had better be done wrong than not at all, the fracture was placed in a rectangular splint; whether right or wrong you may judge. Suffice it to say that by the free use of anodynes and the best of care, he got through the night with as *little* loss of sleep as his surgical attendant. On my arrival home, the books were eagerly searched for the treatment of the particular fracture under notice. It did not require a great amount of search to discover that every rule of surgery had been violated, and should the same line of treatment be continued for any length of time, the position of the surgeon in attendance would be rendered exceedingly unhappy.

The patient was surprised and pleased by a *very early* call from his surgeon the next morning, when a well-padded straight splint was adjusted, the fractured olecranon brought down as far as possible, kept well in position, and by care and attention, he got a very good arm.

Very many years have passed, and a large number of fractures have been treated since, and the lesson has been well learned, that the final result in a given case does not depend upon the peculiar treatment adopted the first night.

Not long after the occurrence above narrated, a call was received at twelve o'clock at night, to see a case of severe hemorrhage from severing of the ulnar artery by a knife wound. The patient was found pale and bloodless, the arm tightly bandaged from the fingers up, by another medical man, who had been previously called. Upon the removal of the bandages, the bleeding being excessive, a tourniquet was applied, and, by the light of *two tallow candles*, (this was before the days of kerosene), without chloroform, a long incision having been made at the inner border of the biceps, the brachial artery was carefully dissected out, ligatured and the hemorrhage entirely controlled. The wound was dressed, not antiseptically, but in accordance with the then rules of surgery; the wound healed kindly and everything went well with the young man until he was

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liberated from the house, and coming in contact with the world again, an irregular practitioner made the astounding discovery that he was pulseless at the wrist and would remain so forever. This encouraging prognosis brought him back to me four months after injury, with a *long face*, a cold hand, and a pulseless wrist, with the proposition that I should pay damages or he would sue me for malpractice. The proposition was declined. However, my mind was greatly relieved six months later when the discovery was made that the artery was tied, even under the unfavorable circumstances surrounding the operation, by accident or otherwise, below the anastomosing articular branch and that pulsation, though feeble, was perceptible at the wrist. In eighteen months, the circulation in the wrist and hand was perfectly restored, thus, in early life, depriving me of a glorious opportunity of appearing in court as a defendant in a malpractice suit. This case furnishes a text for a good lesson to every young practitoner. All admire the courage which prompts a young man to attempt the most *difficult* operations but self-protection is *not* an attribute of cowardice, and if one does not thoroughly understand a proposed operation, and it seems necessary that he should act before he can inform himself, he should not hesitate to state the facts, and operate, if at all, at the patient's risk

This leaves me, at this period of my life, with this question unanswerable; would I now dare operate, under the same circumstances, in the same way, without chloroform or the appliances of modern surgery.

Three years later came a call from a married lady, of Irish origin, a devoted Roman Catholic, who from her early life had been taught that heavy penalties of punishment await those who in any way contributed toward the destruction of their offspring. She said she had taken cold during the menstrual period and the flow had been suspended for three months, and that, although she labored constantly, she suffered a good deal of pain in the head and other parts of the body in consequence. A prescription was given her, and in due season she informed me that the function was fully re-established, and that she was menstruating regularly every month and enjoying very much better health. In exactly nine months from the date she first noticed that her periods had ceased, I was sent for during the night. I found her suffering from what I supposed to be a severe attack of colic, and an hour was spent in administering anodynes, etc., from which she got entire relief. About three hours later, another messenger arrived with the startling intelligence that her whole insides were coming out of her, and that I must hurry, which I proceeded to do, not having the slightest suspicion of her real condition, and on my arrival, under the stimulus of the strange story, proceeded at once to make an examination, and ascertain, if possible, how much of her insides were left. To my great surprise, I found *not* her whole insides, but a fœtus of four months, at least, with placenta attached, all in a most excellent state of preservation. The child had been dead for five months, and she

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had apparently four perfectly healthy normal monthly periods, laboring very hard during the most of the time. The case is interesting and instructive from the fact that no decomposition or septic poison occurred during so long a period of retention of the contents of the uterus after the death of the fœtus.

A few years later came the experiences furnished in such abundance by the war. Under the call of Governor Smith, in the emergency caused by the immense slaughter at the battle of the Wilderness, one beautiful morning, in the month of May, 1864, five minutes were given me to prepare for a trip to Fredericksburg. I was in the condition which all physicians are supposed to be, ready for the summons, and was at once off with the late Dr. Selim Newell, a very bright and medical man. In thirty-six hours we reported to General Staunton, in Washington. We were very courteously received and from him received our passes to the front.

We left Washington on a steamer, on the morning of the next day, and had a very pleasant trip down the Potomac as far as Belle Plain, where we landed in the midst of the most terrific thunder storm I have ever witnessed. It seemed as though the heavens were echoing with increased force the sounds of artillery at the front. Upon shore not a house was to be seen, but instead were thousands of soldiers scattered among their tents. This together with the war of the elements made a picture of real surroundings, well fitted to make a profound impression on the minds of two *quiet medical* practitioners from peaceful old Vermont. The rain was falling in torrents, the Virginia mud increasing in depth every moment. Everything was under strict military control, and there were no familiar faces.

The old doctor was weary and sadly in need of sleep. We finally found the Post Surgeon, told him our story, destination, and needs. The tents were full, but the surgeon, Dr. Kyler, a *genial, pleasant gentleman* of the regular army, kindly interested himself in our behalf and succeeded in lodging us between the boxes of the Christian Commission stores, in the hull of an old canal boat, which had been towed down from Washington. We put in the night with what comfort we could secure, with a single blanket between us and the floor, and in the morning were willing to concede that personal comfort was no part of war.

The day dawned as beautiful as could be desired, and after refreshing ourselves with a cup of coffee and some hardtack, obtained from the Christian Commission stores, we began our journey on foot to Fredericksburg, where we arrived after a weary walk of fifteen miles. The track to our objective point was well marked, for almost the entire distance was strewn with abandoned blankets and arms, with here and there groups of rebel prisoners, well guarded by mounted soldiers. About 4 P. M., foot sore and tired, we were glad to see the banks of the Rapahanock, opposite

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the city of our destination. Here we crossed the river, about a quarter of a mile wide, on a pontoon bridge.

We immediately reported to the surgeon in charge and were each assigned to the care of a hospital. We then, for the first time, realized in its full force the magnitude of the exigency which had called us out. Thirty-five thousand helpless, wounded men, a large part of whom now lay within the limits of the little city, where a short time before ten thousand had almost abandoned their homes and were forced to leave to our soldiers their houses and shelter, in which the wounded men were to be cared for. Every building in the city, public and private, were literally packed with suffering soldiers, all dying.

Here was a field of experiences from which has grown volumes of valuable material, and I trust you will pardon me for adding two or three incidents which occurred during our few weeks stay.

The first effort of the surgeons was in the direction of bringing order out of chaos, getting the men off the floor and on to such stretchers and cots as could be provided or improvised, under such unfavorable circumstances.

Dr. Newell's hospital was some distance away from mine and I had seen but little of him until one morning, four or five days after our arrival, he stepped nervously into my department and in his own peculiar manner, said "I want you to see one of my men, amputation of the thigh, stump looks bad, everything going wrong, come immediately if you can." I went with him at once, and soon found the condition of affairs had not been exaggerated. The old deep flap operation had been made at the junction of the lower and middle third, the stitches had mostly given away, the flaps were swollen and gaping, color bad, discharge copious and very offensive. Upon a close inspection, I thought I saw something resembling a foreign body deeply imbedded at the base of the flaps. I borrowed the doctor's forceps and caught hold of it, and made gentle traction. It yielded and I used more force. The foreign substance *came*, but did not seem to *end* but continued to come. I stepped back, partly from astonishment, but still retained my grasp, and at last it came, to our surprise, like the *ribbon* from the mouth of a skillful juggler, until three yards of narrow cotton bandage had been removed, entirely covered with maggots and matter. The doctor looked on with amazement and consternation for a moment, then turned pale and fell fainting to the floor, from the effects of which he did not recover for forty-eight hours.

The bandage had, no doubt, been hastily packed in upon the field for the purpose of checking venous hemorrhage, and the messenger of mercy who had placed it there never saw his patient again or had any opportunity to inform his subsequent attendant of its existence.

In one of our walks about town one day we met at the door of a hospital a surgeon of one of the Massachusetts regiments, who requested us to assist him in the removal of a bullet from the thigh of one of his in-

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mates. The doctor kindly gave him chloroform and the young surgeon proceeded with the operation. By an unfortunate stroke of his knife, he made a deep cut in the index finger of his left hand. Fully realizing the danger of septic poison, his knives having been in constant service, he handed the knife to me with the request that I complete the operation, The abscess was incised and at its bottom was found the ball, which upon being removed and washed occasioned no little surprise, when it was found to have been thoroughly cemented to the inside of a regulation button. The theory of those who saw it was that it must have gone through the man in front, taking in its passage the button from the rear of his coat and still have retained sufficient momentum to bury itself deeply in the soft tissues of the thigh as found.

Courage is as essential on the part of an individual in fighting to success the battle of life as patriotism on the part of the masses in protecting the life and honor of the nation. The truthfulness of this proposition was finely illustrated by the case of a young soldier belonging to one of the New York regiments, who had received a gun-shot wound through the abdomen, wounding the ascending colon, through which fecal matter was constantly passing. The patient was lying upon the floor in a hopeless condition of despondency, having been told by his comrades that he must die. He was a man of fine physique and to all appearances the possessor of a large amount of recuperative power, which manifested itself later on. He indicated his condition to me, as one without hope or courage, when he said he was just waiting for death. When he was told that death might not absolutely result from his wound, he seemed to gather courage in a moment, a change at once came over him and he declared he would make a fight for life, which he did, and a heroic one. Little could be done for him other than to place him upon a stretcher with a perforated bottom, and by *constant* vigilance and care the wound was kept *scrupulously* clean, and by the end of eighteen days his external wound was closed, and he had a full movement of the bowels by the natural passage, and he was well on the highway to perfect health.

Gentlemen, I feel honored by your presence here tonight, and proud of the fact that I am a member of this body. I am profoundly grateful for the honor you have bestowed upon me in making me your presiding officer upon this occasion. Such a compliment deserves to be acknowledged by a more labored and learned address, but judging from your former kindness and consideration under like circumstances, I know you will accept this poor offering I have to give and allow me to close.

The special committee on Medical Legislation, &c., appointed one year ago, made the following report, through the chairman, Dr. C. F. Branch, of Newport:

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REPORT OF SPECIAL COMMITTEE.

Mr. President and Gentlemen:

In accordance with a resolution passed by this Society one year ago—to the effect that a Committee of three be appointed by the Society, who should make a thorough canvass of the State, and thus attempt to get at the number of practitioners of medicine in our State who are following their practice under the protection of a "bogus diploma,"—to look up the evidence of the need of legislation to regulate the practice of medicine in the State—and therefrom determine the necessity of establishing a central board of license censors—and that a report be rendered to the next annual meeting of the Society,—

As chairman of that committee, I would respectfully report that 562 physicians in our State have been interviewed, by mail, with a half sheet enclosed in a return, printed envelope, upon which was stated the substance of the resolution, and also these questions:

Give your full name and residence?

From what Medical College did you obtain your degree?

Give date of graduation?

Are you a graduate of any Literary Institution, College, Academy or High School?

Have you ever taken out a license?

Of the 562 physicians thus interrogated, 312 have very kindly responded-and exactly 250 have either *neglected* to reply, or *wilfully* shunned the *light* task asked of them—or, but about sixty per cent. have taken any notice of the question.

Of the 312 who have responded, 283 are of Regular or Old School; 19 are from our Homœopathic brethren, and 10 are from the Eclectics.

Of the 312 but 164 have procured licenses to the practice under our present laws, though 62 of the 312 are of those who had been in actual practice in our State at the date of the law requiring a license, which five years of actual practice made such practitioners exempt from the workings of the law.

Adding to the list such of those as are licensed it makes a total of 226 practitioners who are licensed, and the balance of 86 practitioners who are not licensed, but who *should* be.

I know of no way to settle this question about the remaining 250 doctors who have *not been heard from*, among whom are many, probably, of the class we intended to have reached.

Of the 312 heard from, 56 are graduates from Colleges; seventy-two have received Academic educations; thirty-four are graduates from High Schools; one hundred and forty-seven have received only a common school education, and three failed to reply to the question relative to education, hence we may infer their school privileges were limited, as in truth *some of their replies* would indicate.

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It is noticeable that many who received a college education are graduates from our State University or Middlebury College, while a majority are those who attained their degree of M. D. at our deservedly popular State Medical School, at the seat of our University at Burlington.

Every one who has replied to our questions has a diploma, giving date of graduation, together with the name of the college, which in every instance has been an institution which we would recognize as being among those which the profession *generally* recognize.

I regret that the matter of "bogus diplomas" has not been *better* ventilated, but, as it was impossible to visit the different towns, and *personally* investigate this matter, your committee have been powerless to satisfy themselves, and thus *are* unable to answer this question to the satisfaction of the Society.

It is apparent that there is need of increased legislation to further regulate the practice of medicine in our State. Even our *present laws* need to be *amended*, and standing shoulder to shoulder as a Society, see to it that they are enforced.

What man would be suffered to enter the bar of Justice and plead the cause of right or wrong unless he were qualified ?

Who among you could enter a pulpit and preach the doctrines of our *Great Physician* without first being *ordained?*

Why should it be less easier for any of us to attempt the practice of medicine, midwifery or *surgery* without first giving evidence of our *fitness for that profession*, which is expected to minister its benefactions *to all* classes, chastely, *cautiously* and *honestly*.

With regard to the establishment of a central board of license censors. We are cognizant of the fact that many of our sister States have but recently enacted laws which will tend to regulate the practice of medicine within their borders, although Gov. Jackson, of Maryland, has lately vetoed the Medical Bill, as passed by the General Assembly, and the profession are *left* for another period of two years without protection from the annual invasion of medical quacks squeezed out of other States. To say the least, it shows a spirit of narrow minded prejudice unworthy a *cultivated* and enlightened executive.

It would be conjectural to predict what may be done at this term of our Legislature

I am aware that from the general makeup of our assemblies that it would be difficult to change our entire law of medicine.

Politicians attach but trifling weight to medical opinions or wishes. If this were because these opinions are weak, and these wishes impracticable, or hurtful, then such treatment might be endured as being of educational value. *But this is not the case.*

If the profession in Vermont would retain their self respect, and secure their just requests, then let us organize and *work together*, not forgetting

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that a body of men representing an *important idea* are of no use in politics.

Medical Deptment U. V. M.... ... .63
Medical Department Dartmouth..... 28
College Physicians and Surgeons, New York..... 16
University City New York..... 11
Bellevue Hospital Medical College, N. Y..... 8
Castleton Medical College..... 16
Woodstock Medical College.... 8
Harvard Medical College..... 5
Hahnemann, Chicago..... 11
Medical Department University Pa..... 4
Medical Department Howard College, D. C. 3
Rush Medical College, Chicago..... 2
Victoria Medical College, O..... 4
Albany Medical College, N. Y..... 4
Medical Department University Mich..... 3
Berkshire Medical College, Mass 5
Medical Department, University O..... 1
American Eclectic, O..... 2
New York Homœopathic..... 4
Bowdoin, Me..... 1
Long Island College Hospital.... 3
American Medical College, Cincinnati, O..... 2
McGill University, Montreal..... 2
Physicians Medical Institute, Cincinnati, O..... 2
Syracuse Medical College, N. Y..... 1
New England Female, Boston..... 1
Pensylvania Woman's Medical College.... 1

Dr. Dutton, of Rutland, of bogus college fame, arose and proceeded to address the Society on the subject of "Myself and my so-called bogus college." In the midst of his remarks the Society adjourned.

After adjournment the Society met in the dining room of the Pavilion for the annual banquet. The exercises were in charge of Dr. H. D. Holton, Anniversary chairman. Between fifty and sixty members of the Society were present.

We also had the pleasure of entertaining Gov. C. S. Page, and several prominent members of the Legislature, besides the delegates from Rhode Island and New Hampshire.

After the the substantial portion of the banquet was disposed of, a very enjoyable hour was spent in speech making, stories, &c. At midnight the Society disbanded after singing "Auld Lang Syne."

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FRIDAY, OCTOBER 10

Met at 8.15 o'clock A. M.

The Nominating Committee made the following report for officers for the year ensuing :—

President,	J. N. JENNE	St. Albans.
Vice President,	W. H. VINCENT	Orwell.
Secretary,	D. C. HAWLEY	Burlington.
Treasurer,	D. G. KEMP	Montpelier.
Auditor,	C. E. CHANDLER	Montpelier.

EXECUTIVE COMMITTEE.

J. N. Jenne, D. C. Hawley, Edw. R. Campbell.

LICENSE CENSORS.

C. S. Caverly, C. F. Branch, H. R. Wilder.

PUBLICATION COMMITTEE.

J. M. Clarke, J. H. Woodward, J. B. Wheeler.

COUNCILLORS.

R. O. STODDARD	Addison	County.
LYMAN ROGERS	Bennington	"
S. T. BROOKS	Caledonia	"
F. R. STODDARD	Chittenden	"
R. T. JOHNSON	Essex	"
C. E. ALLEN	Franklin	"
F. L. LADUE	Grand Isle	"
E. J. HALL	Lamoille	"
H. H. LEE	Orange	"
R. B. SKINNER	Orleans	"
C. W. PECK	Rutland	"
H. O. WORTHEN	Washington	"
E. S. ALBEE	Windham	"
D. F. RUGG	Windsor	"

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DELEGATES.

American Medical Association.—To be appointed by President and Secretary.

Dartmouth Medical College.—W. D. Huntington, D. C. Hawley.

Medical Department U. V. M.—C. F. Camp, T. R. Stiles.

Maine Medical Association.—M. D. Warren, E. W. Shipman.

New Hampshire Medical Society.—S. T. Brooks, J. S. Richmond.

Massachusetts Medical Society.—S. S. Clark, A. M. Brown.

Rhode Island Medical Society.—J. C. Rutherford, S. E. Darling.

Connecticut Medical Society.—J. M. Clarke, D. G. Kemp.

New York State Medical Society.—J. H. Woodward, E. M. Pond.

New York State Medical Association.—M. R. Crain, F. W. Goodall.

Northern New York Medical Association.—Geo. Dunsmore.

White Mountain Medical Association.—Joel Allen, Deane Richmond.

The Secretary was authorized to cast the ballot of the Society for the officers as named.

On motion of J. C. Rutherford, of Burlington, the Society voted hereafter to pay the Secretary an annual salary of fifty dollars.

The following resolutions, in amendment of the Constitution, were offered: By Dr. H. D. Holton:

1st. *Resolved*, "That the annual meeting in the off year of the Legislature, be held at such place as the Society may vote at the previous annual meeting."

By Dr. C. F. Branch:

2nd. *Resolved*, "That the annual meeting may be held at such place as the Society may elect at previous annual meeting."

Dr. J. H. Hamilton, of Richford, was elected a special committee to further the interests of our Society in legislative work during the present session.

Dr. C. F. Camp, of Barre, read an interesting paper entitled, "Gynæcological Plexiformities."

The paper was discussed by Drs. Branch, Hamilton, Rutherford and Hawley.

Dr. E. M. Pond, of Rutland, presented a paper on "Stricture of the Urethra," and Dr. J. H. Reilly, of Rutland, a paper entitled "Incision of the Cervix vs. Rapid Dilatation."

Both of these papers were read by title only, on account of limited time.

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During the meeting the following physicians were elected to membership.

E. B. WATSON, Williamstown,.....U. V. M.
JOE W. JACKSON, Barre,..... " 1890
LOUIS W. MAYNARD, Burlington,..... " 1889
F. W. CARPENTER, West Rupert, ... " 1877
G. W. E. FLANDERS, Fairfield,..... " 1888
H. B. KENYON, Townshend,.. ... ...University of New York, 1878
EDGAR V. TRAIL, Manchester,.....Albany Medical College, 1874
T. R. STILES, St. Johnsbury,.....U. V. M., 1869
R. O. STODDARD, New Haven, ... " 1890
W. C. BLAKE, Lyndon,.....Dartmouth, 1884
E. P. STIMSON, West Randolph,..... "
S. A. JONES, Sheffield,.....U. V. M., 1888
F. C. MORGAN, Felchville,..... " 1886
R. M. CHASE, Bethel,.....Baltimore, 1890
D. L. BURNETT, Stowe,..... " 1890

On motion a vote of thanks was tendered the sergeant-at-arms and the various railroads for courtesies extended.

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ATTENDANCE.

Drs. H. D. Holton, Brattleboro.
O. W. Sherwin, Woodstock.
F. T. Kidder, do
Henry Boynton, do
W. H. Vincent, Orwell,
E. W. Shipman, Vergennes.
J. N. Jenne, St. Albans.
Geo. Dunsmore, do
J. H. Woodward, Burlington.
D. C. Hawley, do
A. P. Grinnell, do
J. C. Rutherford, do
W. D. Huntington, Rochester,
E. B. Watson, Williamstown,
E. H. Pettingill, Saxton's River,
H. B. Kenyon, Townshend,
D. G. Kemp, Montpelier.
A. B. Bisbee, do
C. E Chandler, do
E. R. Campbell, Bellows Falls.
H. R. Wilder, Swanton.
F. R. Stoddard, Shelburne.
R. O. Stoddard, New Haven.
Geo. B. Nichols, Barre.
E. V. Trull, Manchester.
F. W. Goodall, Bennington.
Geo. Davenport, E. Randolph.
J. H. Hamilton, Richford.
J. M. Clarke, Burlington.
T. R. Stiles, St. Johnsbury.
S. T. Brooks, do
H. B. Brown, do
S. L. Wiswell, Cabot.
C. J. Russell, Hinesburgh.
Henry Janes, Waterbury.
J. H. Jackson, Barre.

Drs. Joe M. Jackson, Barre.
C. F. Camp, do
O. W. Phelps, Bellows Falls.
F. W. Carpenter, W. Rupert.
F. C. Morgan, Felchville.
E. P. Stimson, W. Randolph.
C. C. Smith, Gaysville.
C. W. Dustan, Craftsbury.
C. F. Branch, Newport.
W. C. Blake, Lyndon.
M. D. Warren, Cabot.
A. E. Moody, Isle La Motte.
S. H. Griswold, Rutland.
H. H. Lee, Wells River.
O. W. Peck, Winooski.
Norman Tousley, Panton.
J. C. Rutherford, Newport.
A. J. Darrach, Enosburgh.
W. H. H. Varney, Charlotte.
R. B. Skinner, Barton.
C. W. Petty, Keeler's Bay.
S. A. Jones, Sheffield.
C. N. Hunt, Worcester.
E. M. Brown, Sheldon.
F. L. Brigham, Pittsford.
Joseph Draper, Brattleboro.
L. M. Greene, Bethel.
R. M. Chase, do
A. C. Bailey, W. Randolph.
C. Newcomb, Haverhill, N. H.
C. S. Caverly, Rutland.
S. E. Darling, Hardwick.
C. L. Erwin, Newport Centre.
V. C. Goodrich, Brookfield.
C. F. Camp, Barre.
A. L. Bingham, Williston.

S. N. Welch, Delegate, Sutton, N. H.

Elmer E. Moore, delegate, Providence, R. I.

Total attendance, 72.

On motion adjourned.

D. C. HAWLEY, M. D., Sec.

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OSSIFIC DEGENERATION OF THE GALL-BLADDER.

By Dr. S. T. Brooks, St. Johnsbury.

Osseous degeneration of the Gall-Bladder must be an extremely rare disease. I find no allusion to it in any of the standard authors consulted, including Ziemssen, Page, Wood, Flint and Watson; the comprehensive compendium of Copeland, the American Cyclopædia or Quain's more Modern Dictionary. The only *reference* to such a morbid condition is by that remarkable writer on the liver and its diseases, Dr. George Budd, whose work today stands almost unrivalled in authority and fullness,—P. 193.

The following is a brief and imperfect report of the pathological specimen before you:

The proprietor of this ossified gall-bladder was one of the most perfect specimens of mankind, *physically*, that I have ever known. Less than one year prior to his death, already 76 years of age, as I beheld him marching in procession with his brother Masons, as their Chaplain, you would have chosen him from among all his robust compeers as the one most likely to be their centenarian. Six feet high, weighing 200 pounds, erect and stalwart, his manly form and military bearing were worthy of his official position.

I had known him well and been his family physician for nearly 30 years. From boyhood to old age he was an habitual abstainer from all that can intoxicate, and an example of moderation in all things. When 20 years of age he left his home in the East and went to some locality in Iowa where he sought his fortune as a mechanic. The place was unhealthy, and he contracted malarial disease of so serious a character as to compel him, after about a year's residence, to return eastward, and Buffalo, N. Y., became the place of his home for 20 years. Here his health was wholly restored, and he remained apparently free from disease for 15 years up to 1873. He was then a resident of St. Johnsbury, and a mechanic in the pattern department of the scale works. In October of '78 I was first called to attend him professionally. He was suddenly attacked, while at his work, with acute pain in the epigastrium, extending to the right side, accompanied by nausea and vomiting, and severe spasmodic action of the abdominal muscles. The pain was relieved by powerful anodynes, and after four days he returned to his usual work. He was, however, subsequent to this, subject to similar attacks at irregular intervals of 12 to 18 months up to June, 1882: never being compelled to be absent from his work more than two or three days; his general health continuing remarkably good and his digestion unimpaired.

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In June, 1882, after imbibing "very moderately" of ice water, one of his attacks came on, of greater violence than usual,—so disabling him as to make it necessary for him to be borne very carefully to his home, where he was confined to his bed for ten days, and was unable to resume work for four weeks. This attack was accompanied by general fever, and tenderness over epigastrium and right hypochondrium; torpid bowels, the evacuations early being light colored, but later, after calomel and salines were administered, considerable biliary matter; but there was no appreciable discoloration of the skin or conjunctiva. I always regarded this attack as one of inflammation of the gastro-duodenal mucous surface. His recovery, however, was good, and from this date for nearly three years he was free from ailment. In July, '85, and October, '86, there were mild returns of his former trouble, but of short duration.

In June, 1887, he was called, by the illness of one of his family, to Brooklyn, N. Y. After a few days his friends noticed a marked change in his appearance and actions, and on enquiry he admitted that he was feeling very unwell; complained of languor and depression; loss of appetite, some nausea and dizziness; torpid bowels, and sensation of discomfort rather than pain in the bowels and right side. These ailings continuing and becoming more serious he returned home. On the 2d of July I was summoned and was surprised to note the marked change in his physical appearance. Now there was a distinctly yellow tinge to the skin and eye. Previously, in his temporary attacks there had been in my judgment some enlargement of the liver, as indicated by increased hepatic dullness on percussion, which would disappear on recovery. Now for the first time I discern a diminished hepatic dullness—the border of the right lobe not reaching within an inch of the border of the ribs.

Eye sight remarkably good; no indication of osseous or fatty degeneration of any tissue or organ; *radial* arteries free from degeneration, and no *arcus senilis;* the urine very dark and abundant, with a specific gravity of 1015., but no albumen or sugar; evacuations small and clay colored; appetite gone; loss of flesh in three weeks 15 lbs. Pulse sluggish, 60; no increase of temperature; sleep imperfect, troubled dreams; double vision, and a strange feeling of foreboding evil. Day by day the icteric symptoms increased, accompanied by troublesome itching and an eruption (Acne) which became quite general; the dark, almost black, urine showed how bravely the kidneys were doing double duty, excreting the biliary elements so distinctly manifesting the series of beautiful rings; the uppermost a bright grass green, the characteristic indication of biliary pigment by Gmelin's test of enteric acid, and then the blue, violet, red and yellow, each in their order. From this time, (July 2d,) there was a gradual failure of the vital forces, rapid emaciation, mental dulness, constant restlessness from the pruritus, which prevented sleep except as induced by hypodermic injections of morphia and atropine admin-

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istered every 6 or 8 hours; complete torpor of bowels, there being no action save that produced by stimulating enemata, and the evacuations always clay colored; pulse averaging 55; temperature 101½° to102°. For 36 hours preceding death, which occurred August 7th, 1887, there was entire loss of consciousness.

24 hours after death a post-mortem examination was made with the following results: Liver much smaller than natural, weighing 2 lbs. 18oz. It had lost its solid character and was soft and flabby, but not easily broken down by pressure. The entire walls of the gall-bladder were converted into an osseous mass, the cavity being somewhat enlarged and empty. The cystic duct was larger than normal and its coats thicker, the outer coat was of the firmness of cartilage but free from calcareous plates. As seen in the specimen the wall of the bladder and the coats of the cystic duct were thicker than normal. There were no gall stones in either the bladder or its ducts, and no trace or *stain* of bile. The cystic duct was unobstructed. In the common duct, just below the union of the hepatic duct with the cystic there was closure, causing complete obstruction for at least ½ inch, the passage below to the abdomen being open, but contracted somewhat. The cut surface of the liver was of a deep olive color; the hepatic ducts much enlarged and the lobules of the liver were not easily recognized. Examination of the abdomen, stomach and bowels revealed nothing abnormal, nor was there any pathological change in the kidneys save their unusual size, due undoubtedly to the increased functional burden imposed upon them as excretors of bile supplementary to the liver. A portion of the substance of the liver was removed for microscopic examination, but I deeply regret to say that in some unaccountable way this disappeared. as this would have added much to the value of my report. Doubtless a minute investigation would have revealed, as a sequence to the *obstruction* of the *common duct* as first described by Dr. Williams in 1843, and subsequently confirmed by Dr. Budd and others, a complete destruction of the proper cells of the liver, which would be followed by atrophy of the capillary vessels subservient to their secretion. These two circumstances explain the shrinking of the liver, and the absence of any appearance of lobules.

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PERITYPHLITIC ABSCESSES.

The report of three cases of Perityphlitic Abscesses treated by Aspiration and washing out the cavity with a warm solution of carbolic acid.

By Dr. M. R. Crain, Rutland.

E. M., Male, aged 14; American. Saw him Feb. 14, '86, in consultation with Dr. Griswold. He gave the following history: Feb. 2d, after sliding down hill he had some pain in the right iliac region, which increased so that he had to take to the bed and called Dr. Griswold on the 5th of Feb. The doctor said he found him a little feverish, with considerable pain in the right iliac region. There was obstruction of the bowels, he thought, by fecal accumulation in the cæcum. He gave him opium and calomel, castor oil and injections, and finally got several movements of the bowels. In giving him injections, he found a large tumor in the rectum.

When I first saw him, Feb. 14, he was suffering considerable pain in the abdomen, his temperature was 100°, pulse 120, and was vomiting every thing he took. There was a little fullness in the right iliac region, and was rather hard. In the rectum was a large tumor, which was round and smooth. My diagnosis was Perityphlitis, which had gone on to the formation of an abscess. I injected hypodermically morphia and atropia four times during the night. He did not vomit again, but had three or four profuse passages from the bowels, through the night.

Feb. 15th. Temperature normal, pulse 86. Is free from pain, and the fullness in the right iliac region and the tumor in the rectum are much diminished, and it seemed as if resolution was taking place.

Feb. 16th. Temperature 99½, pulse 104. Does not suffer much from pain. Tumor slightly increased in size.

Feb. 18th. Temperature 100, pulse 112. Had a little more pain, but does not take much morphia. The tumor has increased; more fullness in iliac region, and get distinct fluctuation.

Feb. 19. About the same, except more pain. I aspirated above the pubes in the right iliac region and drew six ounces of clear pus. After drawing pus found the tumor had entirely disappeared, but there seemed to be some thickening.

Feb. 22d. Abscess seems to be filling up; has some pain; temperature 99 3-5, pulse 110.

Feb. 23. I aspirated again and got four ounces of pus, was so thick that it would hardly flow through my largest needle. Washed out the abscess with 1½ % carbolic acid.

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Feb. 25th. Temperature 98 4-5; pulse 88. Bowels moved yesterday P. M. There is no fullness in the right iliac region. Tumor in rectum has diminished in size, and is soft. Has not suffered much pain nor taken much morphia.

March 5th. Temperature 98 2-5; pulse 84. Tongue clear but a little red; appetite good. No fullness in the abdomen; tumor is smaller and lower down; bowels moved yesterday; has very little pain and for the last two days taken only 5 m of Magendies solution once in 12 hours.

March 26th. He is up and around the house nearly all day, and has gained 10 lbs. since he left the bed; abdomen seems normal; there is a little fullness in the rectum.

He is well up to date.

I. S. French, aged 24. Male. Saw him May 4th, 1889, in consultation with Dr. Gilchrist. Had been sick 2 weeks. Was taken with severe pain in right iliac region, radiating to different parts of the abdomen; had slight chills, temperature ranged from 100° to 102½°, with slight fullness and tenderness in the right iliac region. Diagnosis—Perityphlitis. He had a similar attack just one year before, which resulted in resolution. When I saw him there was a slight fullness of the right iliac region. On palpation I found a small tumor deep in the right iliac region, but there was no fluctuation.

Ex. per rectum revealed nothing. I was of the opinion there was pus, and advised an operation, which I performed, assisted by Dr. Gilchrist, and got about three ounces of pus, with a very strong fecal odor. I reversed my aspirator and without withdrawing the needle injected, as hot as he could bear it, into the abscess cavity a 2 % solution of carbolic acid. I then withdrew the fluid and repeated the injection, this time the fluid returned perfectly clear. I did not see the patient again for 12 days, then I met him on the street carrying several large packages, having walked from home, about one mile distant. He has been entirely free from the trouble since.

The following notes were furnished me by Dr. Newell:

Mr. G. N., aged 52. Swede. Saw him first Aug. 4th, 1890, with following symptoms: Violent colic-like pains over abdomen, profuse cold perspiration, severe chills, repeated and copious vomiting; fecal odor to vomited matter; a large tumifaction found in right iliac fossa. Respiration labored, pulse small, weak and rapid, almost imperceptible at wrist, in short, all of his symptoms were of the most violent character, and I feared immediate collapse. Temperature 98° in the mouth. He had a history of Perityphlitis three years ago, which confined him to his bed six weeks. Had had no passage from the bowels for five days; was wakened suddenly from his sleep with severe chill and vomiting; tongue covered with dry gray coating; was about his work at marble mill up to Saturday night. I gave him hypodermically ½ gr. of morphia with 1-75

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of atropia sulph. and a hot sling ; flannels rung out of hot water on abdomen, feet and hands; six hot water bottles at his sides. It was three-quarters of an hour before reaction took place, and he stopped shaking. After this he did not vomit ; gave him 1 oz. of castor oil, also repeated large enemas of soap and water without any success ; then gave 3 oz. of castor oil warmed, without success ; then warm water and glycerine which was followed with very large amounts of hard, nearly black, discharges, and on repeating the glycerine and water he passed a large amount of fecal matter. I kept him free from pain by hypodermic injections of morphia ¼ gr. twice daily. His temperature was never over 101 until the fifth day, when it increased to 102. Had increased tenderness and tumefaction over cæcum. He was allowed only liquid diet and that only in small quantities, a little water often, as he was very thirsty. On the 7th day I called Dr M. R. Crain in counsel, and the tumor being distinctly felt, both externally and per rectum, we decided to aspirate, which we did immediately, first giving him a hypodermic of morphia. We drew out 6 oz. of dirty, grayish, thick pus, the stench of which filled the house. Washed it out with 2 % solution of carbolic acid, and had to repeat it four times before the fluid returned clear. From this time he made rapid strides towards recovery, and in twelve days from operation was able to be up and walked about, and is now able to be at his work.

Although we cannot draw definite conclusions from so few cases, yet the results are such as to justify fart .er trial.

We have to be more conservative in private practice than surgeons are in hospital practice, as many of our patients are loth to submit to an operation, and will not consent until it is too late. But no one would object to so slight a proceeding as aspiration.

In those cases where aspiration failed to produce a cure, we can cut when the abscess fills again.

The recent results attained in Germany in treating cold abscesses by injecting an emulsion of iodoform and glycerine give additional faith in the treatment that I advocate

My plan of treatment may thus be briefly stated. Aspirate early and without an anæsthetic ; without withdrawing the needle inject the cavity with a hot 2 % solution of carbolic acid so that the patient will feel a slight distention ; be careful and not use much force as we might rupture the abscess wall. Repeat the injections until the fluid returns perfectly clear so as to make the cavity perfectly aseptic.

If the cavity is made perfectly aseptic it is not unreasonable to suppose that fruit seeds or other foreign bodies may become encysted and remain harmless.

The good resulting from the injection may not be due entirely to the carbolic acid, but partly to filling the cavity with hot water, as we now know how much some cases of peritonitis are benefited by simply flushing the abdominal cavity with hot water.

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PUERPERAL FEVER.

The Microbic Theory of Puerperal Fever as viewed from the stand-point of a country doctor.

By Dr. Geo. Dunsmore.

The term puerperal fever is generic, and includes any and all fevers occurring during the puerperate state. It may be metritis partial or complete, endometritis, peri-metritis, cellulitis, peritonitis, lymphangitis, phlebitis, and, of course, septicæmia.

Perhaps few subjects in medicine during the last forty years have elicited profounder thought or deeper research by the leading medical minds of both the old and the new world than the causes of child-bed fever. Theories innumerable have been advanced, and each in turn has been replaced by its younger brother. And as in the family the youngest is always the best, so here the last theory outshines all its predecessors. Its friends tell us that it will pass down the corridors of the ages with the bloom of youth still upon its cheek, and that the flight of centuries will neither whiten its locks nor dim the lustre of its eye. They say it has not only come, but come to stay. This is what may be termed the microbic theory of the disease.

It is said to be due to a micro-organism, a germ or the secretion of a germ or germs. This secretion is called a ptomaine. These microbes seem to be the pack horses that carry the virus of Puerperal Fever from the outer world into the genital organs of the lying-in women. These poison bearers are not confined to the genital organs; they are cosmopolitan, citizens of the world, filling immensity with their presence.

The author of this theory claims for these microbes the sole right to produce child-bed fever. In other words they have an exclusive patent on this disease.

The former theories of septic poisoning due to a retained placenta, or a decomposed fetus do not have even the respect due to age. According to this theory, the cause is always without and never within the patient.

Its friends claim that it does not rest on theory, but on facts, yes, facts proven. I like it for its simplicity. It requires no mental effort to grasp it. It is a cause to which all women in the lying state are equally exposed at all times and under all circumstances. These poison carriers never of their own volition enter the vagina, much less the uterus. To

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enter either, they themselves must be carried and deposited there. The vehicle of transportation, must of necessity, be the hands or the instruments of the accoucheur, or both. It is, therefore, axiomatic,—no hands, no instruments used, no puerperal fever.

To me the most astonishing part of this wonderful theory is that all germs, whether innocuous or not, will produce this disease.

This, gentlemen, is, I believe, the last theory advanced to account for this most formidable and fatal of diseases.

With this theory staring us in the face the moral obligation resting upon us, as obstetricians, cannot be overestimated. The whole burden of responsibility rests upon us and us alone. We cannot, therefore, charge the disease to taking cold, to getting up too soon, to improper diet, to fright, or to anything but ourselves. This will certainly make it very hard on the doctor, who always charges it to any thing but himself. And, gentlemen, it puts us all in a very tight box with no loop-hole of escape, when we need to have so many. But let us now look a little at this theory from our own standpoint as medical men. We are not wise, but we have the inalienable right to think and to protest against swallowing, unconditionally, any theory that may be advanced by any man, however distinguished he may be, or however remote from us he may live. "Distance lends enchantment to the view" is as true to-day as ever.

My first grounds for disbelief in this theory is the extreme variety of the disease. Many men who have spent years in obstetrics and delivered hundreds of women, have seen comparatively little of the disease, and this too, where no antiseptic precautions were used. Again a primipara is more subject to the dis ase than a multipara. I will also venture the assertion that it is of more frequent occurrence in those having an easy and normal labor, than in those who suffer from difficult, or even instrumental delivery. In a practice extending over thirty-five years I cannot now recall but one case following instrumental delivery, but can a number where labor was quick, easy or normal. In my earlier practice I used forceps far more frequently than now, and slight laceration of the perineum was of no uncommon occurrence. Again, cases have occurred where the delivery was purely automatic. Indubitable evidence is not lacking of its having occurred before delivery. One of the worst cases I ever had, that recovered, was of this character. Why is it, if this theory be true, that all women in the lying-in state, with a lacerated perineum, do not suffer from this disease? Pray tell me why it is essential that the woman should be in the puerperal state at all in order to absorb this virus and suffer its consequences? Do these microbes utterly refuse to deposit their secretions on lacerations other than those on the lying-in women?

No other organ in the body has been so abused and maltreated as the uterus. And I might say that no other organ could endure what it

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has and survive. It has assumed every conceivable mal-position. Its inside has been unmercifully rasped and scraped, the outside, doubtless, escaping because it could not be reached. It has made its exit from the body so distorted that its most intimate friends did not, at first, recognize it. It has made its appearance outside of the body inverted and only after the most heroic effort and much traumatic injury, has it been restored to its normal position. It has protruded from the vulva for weeks, months and even years, an excoriated bleeding mass. It has lain during these years with these bleeding mouths open among millions of these poison bearing microbe and yet not one symptom of this disease.

Is there something so peculiar about a lying-in woman that rents, fissures and abrasions on her and her alone, will absorb a ptomaine?

Again if there is any thing as to the cause of disease established on a solid basis it is that like produces like. For example, the virus of syphilis will produce syphilis and nothing else. So of diphtheria, cholera, erysipelas, enteritis, phthisis and every other disease known except the one under consideration. For this disease any microbe can claim paternity. Does not this run counter to all our preconceived notions of law of causes and effect in every thing else in the natural world?

Has the Almighty become so dissatisfied with that which he created in his own image as to violate natural laws that he might destroy it?

But the defender of this theory claims that it has been proven and no longer rests on a theoretic basis. He claims that the use of antiseptics and only antiseptics will wipe out the disease. With this assertion I must take issue. Their real virtue is in the form of injections of carbolic acid. Let me quote from Dr. Branch, of New York, who in 1884 made a tabular statement from the various lying-in hospitals of Europe comparing the results of those using carbolic acid injections prophylactically with those where it was not used.

Hospitals in which injections were used:

	Mortality. Per cent.
Charitie (Hartman)	2.5
Charite 1879 to '81 Guperon	1.5
Charite for 1882	1.6
Maternity at Parma	3.42
Glasgow Maternity, new building	1.56

Hospitals in which injections were not used:

	Mortality. Per cent.
Pavilion	.00
Prague Maternity	.46
Briesky and Fischel for 1881	.56
Briesky Ward for 1882	.00
Copenhagen Maternity 1880	.26
Copenhagen Maternity, 1881	.50
Prague Maternity, 1100 cases in 1883	.00
New York Maternity	.00

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This, gentlemen, is certainly not a very good showing for the prophylaxis of carbolic acid. Other things being equal there is but one conclusion that can be drawn from the above statement, *viz.* that the greater mortality where injections were used was due solely to the irritating properties of the acid itself. And if there is danger in the use of carbolic acid as a uterine injection what will you say of corrosive sublimate?

Professor Billroth recently advised against the use of carbolic acid on raw surfaces, as he has seen several cases of gangrene result from its use. How many women have fallen victims to this prophylactic craze will never be known. Many cases, both in public and private practice, have been reported, but God only knows the number not reported.

The idea of injecting into a uterus whose surface is covered with hundreds of open mouthed absorbents, one of our most deadly poisons, has been to me so utterly untenable and devoid of that caution and conservatism which should characterize our dealings with the lying-in women, that I have never used it. Gentlemen, this theory is either true or false. If true, was any plan of disinfection ever offered too thorough? That cannot be.

Then let me ask its champions what has become of the burning sulphur and the carbolic spray to kill the microbe in the air of the lying-in chamber, to say nothing of the disinfection of the woman herself and her attendants?

Do you say it is still used? No, you do not. If not used, why not? If it will kill microbes and you do not use it you tacitly admit that you believe there are no microbes to kill.

You cannot pull out the key-stone of this microbic arch and not expect the whole structure to fall.

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GYNECOLOGICAL PLEXIFORMITIES.

Dr. C. F. Camp, Barre.

The complications which confront a practitioner in the diagnosis of the various diseases, and the multiplicity of forms with which they present themselves in gynecological practice, is at once astonishing. A practitioner who has the courage of his convictions, and says he is unable to diagnose, is often the safest one to trust in the treatment of the case.

Much depends upon anticipation; many times a long train of symptoms may guide one but little as a whole, unless they are properly classified. Too many physicians at once seek a digital examination, which in a hospital practice may be expected, but cannot be obtained in the country. Until the physician has studied the anamnestic, diagnostic, and if possible the prognostic signs, and has thus given the case due thought, he is unable to go ahead with an examination which will materially aid him in a proper diagnosis.

Care cannot be overestimated in the examination of new cases, nor for that matter old ones. How easy to rupture the thin walls of a long standing pyos-salpinx, thus rendering the necessity of a laparotomy sooner than we care to operate. How many reflex symptoms arising from a small laceration in the cervix are treated annually because the physician failes to recognise the fact, or perchance the laceration was repaired at the time of the injury, which only made the case more grave. How many pessaries are placed in position when their support, the perineum, is absent; perhaps the mucous surface shows no sign of rupture when a recto-vaginal examination shows the complete rupture of the deeper tissues.

How many young girls are treated for what is supposed to be the premonitory symptoms of some grave disease, at the time when only physiological conditions are being fulfilled, and the genital organs perhaps a little irritated by rapid growth; how easy to fool yourself and how grave sometimes are the results of those impressions upon the young patient's mind. Hospitals and Asylums are furnishing shelter for many poor unfortunates who might have made beautiful wives and loving mothers had they not had the symptoms of some trifling case gathered and multiplied, and their gravity magnified into the probability that some great operation would eventually be their only hope of life. We often fail to realize how insidiously these magnanimous diagnoses work upon the young, untaught and ready mind; what can be more harmful to a woman, and especially a young one, than to think she has "falling of the womb"?

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With such an idea what will be the kind of literature she will seek? what reference will she make of every little uneasiness she has in the region of the abdomen? what habits of protection she will fall into?

How readily she will enslave herself to prevent the awful forms she has learned about; but alas! the illusion is ever present, and how soon the ideal delusion may drive her to the asylum depends upon her individual spontaneity.

What, then, shall we do to remedy this state of affairs?

Look carefully into the case before you; put yourself upon record; do not be too eager to give the case a far-fetched cognomen; classify the symptoms and signs; satisfy yourself of the precise nature of the case before informing your patient.

Most of the cases in a country practice are some form of leucorrhœa or irregularities of menstruation in the young, while our married patients present inevitable signs most frequently of either cervical or perineal laceration; these should, when symptoms arise to warrant an interference, be attended to at once.

Removing the cicatricial tissue from a lacerated cervex and bringing the gaping parts into apposition will often give the most gratifying results with very little trouble. Some of the most annoying cervix lacerations are those which have been operated upon at the time of the injury; this should never be done, for two reasons: First, nature may so far aid herself that an operation may never be called for. Second, subinvolution will take place so rapidly after labor that before your wound has united, your stitches have become worse than useless. Wait a year or six months, and then if symptoms arise calling for an operation, you have much better opportunities for operating. Again, you should never operate when a large degree of congestion or engorgement exists, if you do you will have a condition following which, on the surface of the body, would be erysipelas.

Relieve by remedial treatment the congestion, and in two or three months you can operate very successfully. Attempts have frequently been made to repair the cervix and perineum at the same sitting; this, again, should never be done; for when you wish to remove the stitches from the cervix you will jeopardize your perineal operation which might otherwise have been successful; repair first the cervix, then the other can be done and remain till sound.

Cases of prolapsus of the urethra often lead to symptoms simulating cystitis, and these aggravating symptoms will never yield to remedies, while the button-hole operation of Emmet will often relieve at once, giving you then ample time to treat the redundant, pouting mucous membrane until it is sound, afterwards you can repair your artificial opening, and return the urine into its natural course These are every day cases that the physician should treat and not overlook, while the larger operative ones he may if he chooses send to the City.

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STRICTURE OF THE URETHRA.

By Dr. E. M. Pond, Rutland.

A stricture of the urethra is any unnatural narrowing in its caliber. There are certain points of physiological narrowing, namely, at the meatus, the middle of the pendulous and the beginning of the membranous urethra; these must not be confounded with stricture.

Strictures are of two kinds, spasmodic or muscular, and permanent or organic.

Spasmodic strictures are of common occurrence, and are caused by a highly sensitive urethra, constitutional disturbances and reflex action. They occur at various points, but most often at the beginning of the membranous urethra. The sensation conveyed to the surgeon is that of the instrument being grasped and firmly held; this generally gives way in a few minutes and allows the instrument to glide smoothly on. Spasmodic strictures always occur suddenly, the stream of urine being normal between the paroxisms.

True or organic strictures are of three kinds, linear, annular and irregular. The linear is similar to a string being tied around the urethra: the annular is broader, as though a lap were tied around; the irregular embrace all the others, some of which may extend an inch or more in various directions.

Seat: The bulbo-membranous urethra, including one inch in front, and three-fourths of an inch behind the bulbo-membranous junction, varying from 4½ to 6½ inches from the meatus, is the favorite seat of strictures, having 67 % (Thompson.) The 2½ inches anterior to this contain 16 %, and the first 2½ inches from the meatus 17 %—most of the latter being situated at the meatus and fossa navicularis. Strictures are rarely found in the deep membranous urethra, and prostatic strictures practically never exist.

Pathology: The morbid change may be simply a thickening of the mucous membrane, it being less polished, and congested and covered with granulations. This takes place within and beneath the mucous membrane and not on its free surface. If more advanced in the spongy tissue the meshes will be found broken down, glued together, and a mass of dense fibrous tissue encircling the urethra, which holds it firmly contracted. This tissue may be slight, cicatricial, and tightly contracted, or it may be excessive in amount.

Organic stricture is always caused by inflammation, excepting traumatism gonorrhœa plays the largest part, and the longer its duration,

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the more the chordee and symptoms showing the delicate tissues of the spongy portion are involved, the more apt is stricture to follow. If the chordee be broken traumatic stricture is sure to follow. In the treatment of gonorrhœa if the inflamed meatus be irritated by a long pointed syringe, or if strong injections be used, stricture will follow; the latter generally situated 2½ inches from the meatus.

Any injection strong enough to cause blood, or subsequent prolonged pain, is capable of causing stricture. A stricture will often follow an attack of gonorrhœa, even if no injections are used. A stricture may form during or directly after an attack of gonorrhœa, or as late as one year; sometimes as late as five or ten years.

Diagnosis: For the first exploration of the urethra it is best to use a blunt pointed steel sound, which will just pass the meatus, if it be not unusually small. It should be warmed, lubricated and gently passed. If it is obstructed any where, there is stricture, for the meatus is normally the smallest point. When an obstruction is met, a smaller sound should be passed, and thus on until one is found that will pass the obstruction. It is better to start with a large size, as it avoids confusion; and small, sharp pointed instruments often cause muscular spasm in the deep urethra. Also a false passage or dilated follicle might arrest a sharp pointed instrument, while the large blunt sound would easily glide over. Having discovered stricture it is best located and measured in the anterior urethra by the metallic bougies or urethrameter; in the deep urethra by the flexible oval-tipped bougies. Obstruction below 6½ inches is usually due to an enlarged prostate. The danger of using the oval-tipped bougie only is that the narrowing in the middloe of the pendulus urethra might be called a stricture and cut; if, however, this is caused by granulations and bleeds easily it should be cut, even if no stricture exists.

Symptoms: Sometimes strictures cause no symptoms and are discovered only by accident; in other cases it is discovered only after it has diminished the flow of urine or semen. In other cases it may cause no symptoms until the patient happening to get run down develops chronic inflammation at the place. A slight gleety discharge from a congested or granular mucous membrane as a rule accompanies forming stricture: it may, however, be absent.

The results of stricture are mainly mechanical: the strictured portion is less dilatable and acts as a dam: the urethra behind as a result of increased pressure is dilated: this also dilates the mouths of all ducts opening into the urethra behind the stricture: the sinuses and mouths of follicles become dilated and thus catch the point of fine instruments passed for diagnosis. The ejaculatory duct may also become dilated.

The continued pressure of the urine at each micturition also causes congestion and an increase of mucous in the dilated urethra: after a while a drop of urine is retained behind the stricture and the mucous

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acting as a ferment (especially if the urine be acid) decomposes it, liberating carbonate of ammonia, which sets up an inflammation: this furnishes the gleety discharge or morning drop of pus. This inflammation once started behind a stricture rarely gets well until the stricture is cured. Another result is a forked stream or dribbling of urine, or retention of the last few drops. This mild inflammation may extend backward and set up a mild cystitis with frequent micturition. Among other results may be mentioned retention and extravasation of urine and epididymitis.

Treatment: Strictures of large calliber, or those above 15 French, the main symptom being a gleety discharge and possibly frequent micturition, are of frequent occurrence. The use of the bulbous bougie will detect them, after which no treatment is advisable until the effect is seen upon the patient, as chills frequently follow the first examination. The treatment consists simply in the passage of a conical steel sound, which is well warmed and oiled before introduction, and the observation of hygenic rules with an alkali and balsam if necessary.

The size of the sound should first correspond with that of the bulb which can pass the stricture: one or two large sizes may also be introduced at the first sitting if they pass easily. If a sound larger than No. 15 French can not pass, by its own weight, after a little while, it should not be used. At the next sitting the surgeon should start with a size smaller than the last one passed, and continue to as large a size as can be passed without force.

How often should a sound be passed?

This is best answered by considering the results. Suppose a conical steel sound passed through a stricture which distinctly grasps it as it passes: at the next urination the stream is larger, and so continues for 24 hours; at the end of this time the stream is as small as before, the gleet is the same and perhaps more. For the next 24 or 48 hours the stream continues to diminish in volume and the gleet to get thick and creamy. During the 3d and 4th day improvement begins and often continues for the 6th and 7th day, when once more the stream begins to diminish and the gleet to increase. Now is the time to once more introduce the sound.

As a rule it may be said never to introduce a sound before the 3d day, and that better and more rapid progress will be made if we wait until the 4th, 5th, 6th or even the 10th day. The theory is easy! The first effect of the sound is mechanical and sedative by stretching the urethra; this lasts for 24 hours; the second effect is reaction, with congestion, resulting in tightening of the stricture and increased discharge, this lasts for 24 to 48 hours, after which absorption begins by increased circulation, and continues for two or three days; after which contraction once more begins. At this time the sound should be once more introduced. This time may be estimated by carefully watching the patient,

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The dilatation should be continued to the normal size of the urethra. As a rule when a full sized sound will pass the stricture by its own weight the case is cured and the symptoms subside; sometimes it may be necessary to occasionally pass a sound for some weeks longer.

Strictures of small size or those under No. 15 French are best dilated by the soft bougies until 15 is reached and then continue as for strictures of large size. The danger is, with small steel sounds, of making false passages. These directions apply to strictures of the deep urethra. The best treatment for all strictures in the anterior pendulous urethra is by internal urethrotomy, and the passage of a full sized sound and maintaining it until permanently healed. The best treatment for resilient strictures of the deep urethra is by combined internal and external urethrotomy. Time will not allow me to discuss their treatment.

INCISION vs. RAPID DILATATION FOR STENOSIS OF THE CERVICAL CANAL.

By Dr. J. H. Reilly, Rutland.

I feel that I owe the Society an apology in claiming that better results can be obtained in the treatment of constriction of the cervical canal for dysmenorrhea and sterility, than by the more modern procedure—rapid dilatation, as advocated by Goodell and other eminent gynecologists; but after an experience in the treatment of forty cases, my statistics forces me to take the stand that I have taken.

When cases of this nature first came under my direct observation for treatment, I resorted to the rapid dilatation operation, as a means to produce a radical cure. I assisted at the operation a great many times during my service as hospital interne, and whilst I looked upon the operation as a barbarous procedure, it evidently accomplished the dilatation to such a marked degree that I reconciled myself with the idea that the end justified the means. That the canal could contract again to the same degree as before operation, appeared at that time, to me, an impossibility;

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but it was not my privilege to watch the progress and termination of these cases after leaving the hospital, and not hearing of any unsatisfactory results, I concluded that the results must have been very gratifying to the operator as well as to the patient. After entering practice, when cases of this nature presented themselves to me, the first operation that suggested itself to me was that of rapid dilatation, and after meeting with cases where, after dilatation to the maximum extent suggested by enthusiastic advocates of the operation, and carrying out the after treatment in the manner advocated by them, the contraction was as marked as before the operation, if not to a greater extent, I have concluded that the operation does not overcome to a permanent degree the contraction of the cervical canal.

The cases in which we are called upon to do this operation, generally are dysmenorrhea and sterility. When I say dysmenorrhea and sterility, I do not mean to say that all cases of painful menstruation are due to a constriction of the cervical canal, or that all cases of sterility are due to this condition; I have only reference to those cases where every other reason is excluded and a stenosed condition of the cervical canal exists. When called upon to treat a case of sterility, I think we are justified in operating, if this condition is found to be present, although a history of dysmenorrhea is not associated with the case,—a condition not at all uncommon,—in fact, the only successful case of sterility I treated by rapid dilatation was in a patient who presented herself for treatment to me. She had been married eight years; was twenty-four years of age when married; had never any serious sickness; she was very anxious to have children, and stated that if the fact that she had not was due to any condition that could be corrected, she wanted to have it done. She menstruated regularly, and never had severe pains immediately before this or during period. There was no ulceration around the external os. On passing the sound it met with considerable resistance at the internal os, and was forcibly passed through. The uterus was found to be in its normal position. The only condition about her, that I found, that her sterility could be attributed to, was this apparent constriction at the internal os. I dilated this rapidly under ether, passed a sound at short intervals for a month, after which I did not see her for four or five months, when I was called to treat for some of the disagreeable symptoms of pregnancy, and in a year from the time of operation I delivered her of a twelve pound boy.

Of the forty cases I have operated on, ten were for sterility, and thirty for dysmenorrhea. On the first ten cases that came under my observation for dysmenorrhea, I operated by rapid dilatation, and of these but four were permanently relieved. The condition of six others, after periods varying from three months to a year, was as bad, and in two cases, worse than before operation. They underwent a secondary

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operation by incision, and after a period of from one to two years I have yet to hear of an unfavorable result. Of the remaining thirty cases operated on by incision, permanent relief followed in every instance. Within the last six months I have operated on three cases, which I have not included in my statistics, as I do not regard a case permanently relieved until they pass a period of one year without a recurrence of the trouble. Of the ten cases operated on for sterility, six underwent the rapid dilatation operation. This operation proved effectual in but one case, and that as I reported. After one year's time the contraction was as marked as before the operation. They underwent a secondary operation by incision. Two of them have borne children, and one other is well advanced in pregnancy, and in one the constriction is as marked as before operation. The other patient passed from under my observation about six months after the operation; she was not pregnant at the time. On four patients I have done the operation by incision, during the past year: two are now pregnant,—one two months after operation, and the other four months. On two I have operated within the last three months, and are still under my observation.

The constriction, in every case that came under my observation, has been at the internal os. In not a single case have I met with any resistance with the ordinary sound, until I came to the internal os; and in every instance the constriction has been so marked that an ordinary probe could not be passed unless considerable force was used. What we accomplish on rapid dilatation is a paralyzation of the sphincter muscle surrounding the internal os, but it is only a temporary paralysis, and will gradually resume its function again in the same manner as the sphinterani after forcible dilatation for diseases peculiar to the rectum. The great tendency for this muscle to contract again after dilatation is not at all surprising. Very true, the muscular fibres that are ruptured by the dilatation, lose their power of contractility, but it is almost an impossibility to rupture them all with the instruments devised for rapid dilatation, and I doubt whether we will rupture any of the fibres if only carried to the extent advocated by some authors. When we reflect and consider how soon after a labor, where the muscle encircling the internal os is put upon a stretch to an extent about six times as great as can be accomplished by any of the dilatating instruments now in use, and how soon after it resumes its power of contractility, it is inconsistent to expect to deprive the same muscle of its function under the force of the instruments devised for that purpose.

The operation by incision is not attended with any more danger than that by rapid dilatation. A number of instruments called hysterotomes or metrotomes, have been devised to do the cutting. The objection to these instruments is, that they do not incise deep enough. In my hands

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the long, blunt pointed bistoury has accomplished the desired result without any trouble.

Pelvic peritonitis or cellulitis, is a contra-indication for the operation; in fact, it is essential that any inflammatory trouble peculiar to the pelvis should not exist to have the operation successful. If the operation is done and any inflammatory trouble exists, the operation is certain not to be a success, and the inflammatory condition aggravated. This does not refer to endometritis, but on the contrary when this disease exists, which it does very often as a consequence of the stenosed condition of the internal os, the cure of it is facilitated by the opening of the os.

The operation should be done as soon after a menstrual period as possible. This will give the tissues sufficient time before the next period to completely heal over. If the tissues are in an inflamed condition at the subsequent period, contraction is very apt to follow; for this reason a patient should not be operated on close on a period.

PREPARATIONS.

A mild cathartic is given the night before operation. If this does not prove effectual by time of the operation, the bowels are unloaded by a rectal enema. A vaginal douche is given the morning of the operation; this leaves the parts in a proper condition for the operation. The various steps in the operation are as follows:

The patient is anæsthetized and placed on the table, and a bi-valve speculum introduced, or a Sims, whichever is preferable to the operator. The cervix is grasped by the forceps tenaculum and held in a fixed position. A dilator is passed to open the os up to a degree large enough for the bistoury to enter. After passing the bistoury, the next step is to make the incisions. I resort to the crucial incision, one anterior and posterior, and two lateral incisions. A blunt pointed, double edged bistoury has been devised to simplify the operation by avoiding turning the instrument. I use the single edged one, and do not experience any difficulty in turning it from one wall to the other. The depth of the incision is governed by the experience of the operator. The danger of a deep incision lies in the severing of the circular artery. As near as I can determine, the depth of the incision I usually make is about three-eighths of an inch. The hemorrhage is controlled by compression with absorbent cotton passed into the canal on an applicator. Occasionally I have found it necessary to resort to applications of the persulphate of iron to control the bleeding. A douche of hot water is again given, a stem pessary introduced and held in place by tampons saturated with a solution of glycerine and carbolic acid, ten grains to one ounce; hypodermic is then given, and cold applications are kept over abdomen for about four days.

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AFTER TREATMENT.

A vaginal hot douche is given once a day for about ten days. If symptoms of pelvic inflammation develop, the pessary is taken out, and a sound or dilator passed every few days, and hot applications are to be made instead of cold. It is the exception for inflammatory symptoms to develop. The patients generally make an uninterrupted recovery, and are able to be around on the tenth day. The pessary can generally be left in for three weeks before removing. If the period is due before that, it will be essentially necessary to remove it at the expected time. The patients are instructed how to place tampons themselves. If the operation is for dysmenorrhea, sounds should be introduced a few days before the expected period; if for sterility, I generally wait until after the period before their introduction. If the patients are not carefully observed and dilatation kept up for a year after operation, it is certain not to prove effectual.

THE PROMISCUOUS USE OF OPIUM IN VERMONT.

By Dr. E. W. Shipman, Vergennes.

Mr. President and Gentlemen:—

After receiving the invitation of our worthy Secretary to present a paper at this meeting, the first subject which came to my mind was the indiscriminate use of *opium* by the people of Vermont; or perhaps I would do better to say by the people in some parts of Vermont, for I intend to deal only with what has come directly under my own observation. I have been particularly impressed by the loose method in which this drug is handled in the Green Mountain State, and I feel perfectly safe in making the statement that her population of 332,000 consume as much if not more *opium* and *morphine* than the same number of people any where in the United States—I believe I am not making a wrong statement when I say that there is no restriction whatever upon the sale

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of *opium* and morphine in Vermont. Now is this right? Is it right for us to stand by and see our fellow creatures commit slow suicide without uttering a protest? For the *opium* habit once formed, may, with very few exceptions, be justly designated suicide. I do not wish to pose as a moralist, but after some investigation I have come to look upon the habit as a crying evil of the day, for what sense is not undermined and degraded by the continued use of this narcotic. It has been well said by an eminent writer that any habit which makes one contented with his lot by dulling the senses and producing weird hallucinations, is a baneful one; and is not this especially true of the opium habit? And why not? For the slight prick of the hypodermic needle or a taking into the stomach of a portion of the drug transports the habitue from deepest despondency to that elysium from whose observatory life's greatest cares seem of hardly trifling importance.

The opium eater who is a hod carrier, despite the fact that he may possess qualifications fitting him for a far higher station in life, will continue to be a hod carrier—at least until he becomes too weak to carry his hod; for should he have a melancholy moment in which to bemoan his lot, he can quickly throw a cloak over reflection and see himself in the future a capitalist surrounded by all the luxuries heart could desire—food, drink, clothing and lodging he sees in a few cents worth of the product of the poppy.

I do not presume to say that a pharmaceutical restriction forbiding the sale of opium, except on a physician's prescription, would do away altogether with its being indiscriminately dispensed by the druggist, but it would certainly hold its sale in check to some extent. I have seen five victims of this habit enter a drug shop in the town in which I live and purchase what opium and morphine they desired, within less than two hours time and no questions were asked.

On one occasion I heard a man ask a druggist for ten cents worth of corrosive sublimate, to use, he said, for rat poison. After questioning him rather closely the druggist refused to let him have it, for the reason, as he afterwards told me, that it was a deadly poison and too dangerous a drug for people to handle loosely, and he was fearful lest some wrong use might be made of it; and yet a few moments before he had sold a drachm of morphine to a woman whose family I knew to be in want of food. If asked which of the two should have been sold without question, one would almost be tempted to say the corrosive sublimate, for it done its work quickly and not by a slow tedious process. From whence should come the protest against this lawless traffic in a poisonous drug? Who can better recognize its dangers than the physician? It seems to me that it is our duty as guardians of the public health, and members of this Society to do all in our power to influence the passage of a law to mitigate this evil.

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Statistics show that the habit is growing from year to year, and this is evident by the increased numbers of inmates in the numerous institutions for its treatment, throughout the country. Would it not be well for us as Vermonters to turn a little of that energy which now is directed wholly against intoxicating liquors, to intoxicating drugs. The tippler is to be pitied; but how much worse is the poor victim of opium? once in the grasp of that subtle companion, he is gone, mentally, morally physically. The alcoholic goes on his periodical debauch, and then has his lucid intervals: but the opium eater keeps steadily under the influence of *his* stimulant. Then again, the former reforms occasionally; but does the other? We are obliged to admit that it is exceedingly rare. In this connection I take the opportunity to cite six cases, which have occurred in my practice and which I consider remarkable from the immense quantity of opium and morphine consumed in each.

Case 1. Male, aged 40. Physician; an acknowledged victim of the hypodermic habit; contracted the habit ten years before when he began to take small doses for facial neuralgia. Was taking at the time I first saw him 30 grains of morphine in 24 hours Had taken no solid food into his stomach for a year and a half,—his diet consisting principally of milk. I was called to see him Sept. 1st, 1886, for hypodermic abscesses, and opened from two to five of them daily for a period of three weeks; they occurred in almost every spot within his reach, from the shoulders to calves of legs. Patient was very much bloated, and the urine contained granular and hyaline casts. The amount of morphine was finally increased to 35 grains a day. On March 1st, 1887, he became comatose and died in six hours.

Case 2. Male, aged 55 years; gardener by occupation; contracted the habit of eating gum opium about six years ago, when he was advised by his physician to take opium pills for neuralgia; he began by taking three or four one grain pills each day, and now he has worked up to one ounce of the gum in two weeks. The urine contains a large amount of albumin and a few epithelial casts, skin very sallow; he is a man of spare physique and has never experienced any bloating of extremities; the quatity of urine passed is about normal.

Case 3. Girl, aged 24. Eight years ago she had an attack of ovaritis, both ovaries being involved; this was followed by pelvic cellulitis, and to relieve the pain she was given one-eighth grain of morphine hypodermically; this in the course of a few days had to be repeated so frequently that her physician—who by the way was a disciple of Hahnemann, and a high dilutionist in all things but morphine, *apparently*—to save himself the annoyance of being called upon so often, advised her to procure a hypodermic syringe and use ¼ grains at a dose. This she did, and now with the reins in her own hands she steadily increased the dose and its frequency, until she was taking 20 grains a day; several

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analyses of the urine showed albumin in large quantities, but no casts. An attack of gastritis resulted in death, March 1st, 1890. The patient was never able at any time during her life to bear over ⅛ grain of morphine by the stomach; on two or three occassions, when I knew she had taken a large dose by the skin, I tried the experiment of giving her a small dose by the stomach, and it produced vomiting in a short time.

Case 4. Male, aged 35; began eating opium for no other reason than its stimulating effects were more lasting than whiskey. Three years ago he commenced with half grain pills, and now he buys the gum by the ounce, carries it in his pocket, and when he wants a piece cuts it off with a knife as he would tobacco; as near as I can estimate he uses about 85 grains a day. The urine contains albumen, but no casts.

Case 5. Female, aged 40; takes morphine hypodermically. After considerable strategy on my part in obtaining her confidence she told me that she began taking opium several years ago, because her husband was dissipated, and as he made night hideous, she wanted something to give her rest, and used opium pills. In an attack of cholera morbus she was given a hypodermic injection of morphine by the attending physician, and found its effects so pleasing that she procured a syringe and now makes a regular diet of 15 grains per day. I have analyzed her urine three times and found albumen each time, but no casts.

The sixth and last case which I have to report is a very remarkable one, and one which I fear will almost make you doubt my veracity, but I trust you will bear with me, gentlemen, and stretch your imagination to encompass the facts even though it requires some effort on your part, as it certainly did on mine until I had put down in actual figures what I had done with my own hands. I was first called to see the girl, then 27 years of age, Feb. 1st, 1886, at which time she was suffering from severe dysmenorrhœa. I was informed that she had not gone through a menstrual period in fifteen years without the aid of morphine, and, in the natural course of events, had been obliged to increase the dose from time to time.

She had been through the hands of numerous specialists, among them some of the most eminent gynæcologists of the country, and has a history of having had peritonitis, ovaritis, cystitis, and in fact every other itis to which a pelvic or an abdominal prefix could be attached.

She was in the habit of taking five or six grains of morphine at a dose, never measuring but guessing at the quantity, making the solution with ordinary unfiltered water, and this repeated once in about 5 hours. Knowing her history I gave her 7 grains; and in an hour perceiving no effect I repeated the dose with but little better result. I have seen her repeatedly during a period of 4 years, and have tried in vain every hypnotic of which I have heard. Each time the pain seemed more severe, and was sometimes accompanied by persistent vomiting; each time more

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morphine was consumed, and the doses alternated with inhalations of chloroform. Knowing the case to be a hopeless one, and that counter irritants, and all other methods of treatment were of no more avail than passing away time, I determined to try morphine to the fullest extent and see if it could have a controlling influence. Within twenty-four hours I gave her one hundred and sixty grains hypodermically, and half a pound of Sqibb's chloroform by inhalation. The pain was controlled, but strange as it may seem only for a short time. After this experience I concluded that these immense doses had but little more effect than smaller ones, and I have reduced the amount to 15 grains a day, which acts merely as a gentle stimulant.

This is the largest quantity of morphine taken by any one person within 24 hours which has come to my knowledge. I have searched extensively through several libraries but can find nothing on record to compare with it.

Another curious feature of this case is that she has not had a hypodermic abscess in six years. She ceased menstruating two years ago, and has had no return of it since. The urine has contained large quantities of albumen for two years. She is in the habit of using an 85 m syringe and after filling it and making the puncture, unscrews the barrel leaving the needle in its place, and refilling two or three times.

In every case where the opium habit was of more than a year's standing I have found albuminuria, and in five of the six cases which I have described the bowels were in a chronic state of looseness.

It seems rather startling to think of these large quantities of the drug being used without any obstacle in its path; and perhaps we as physicians may shoulder a portion of the responsibility, in that we at times are too ready to administer a narcotic. The first remedy which comes to the doctor's mind when he is called upon to relieve a paroxysm of pain is morphine; and naturally, for while this is exerting its soothing influence we have time to collect our thoughts and concoct some combination which we hope will effect a cure. I do not wish to set up a cry against opium, which has been designated as the sheet anchor of medicine, but I do think that we should be more circumspect in prescribing a remedy, the use of which by the laity is attended by so serious consequences. Certainly the physician who places a hypodermic syringe in the hands of a patient, when that patient is in the most hopeless of conditions, can not meet with too severe censure.

As a duty to the public let us endeavor to reduce the enormous sale of this drug in Vermont, and confer a lasting benefit upon her people. A man who is intoxicated with liquor would be arrested, and if he told where he purchased that liquor the one who sold it would be taken into custody also and fined; but what happens to the man who is found

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thoroughly under the influence of opium; his most serious trouble is a call from the doctor, and even should he disclose that he purchased the drug at a certain shop what would it avail. People would shrug their shoulders and probably say—Oh well that's different. But is it any better? Ostensibly a stranger in a town in Vermont can not procure whiskey without a written order from a physician upon the Town Agent, but if he wants opium he steps boldly into the druggists and asks for it, and can get all he pays for.

Pardon me, gentlemen, if I have made some rather sweeping statements. They may not apply to the whole of Vermont; but what I have said is strictly true of my own town and of several other places where I have tried the experiment as a perfect stranger. We all have the welfare of our State at heart, and certainly men who have had the stamina to influence our legislature to countenance a Board of Health, notwithstanding the discouraging rebuffs with which they were met, can cope with this problem. There is a solution for it, and let us not be the last to solve it.

THE UTERO-VAGINAL ANGLE AND ITS INFLUENCE ON THE MECHANISM OF LABOR.

By Jacob Chase Rutherford, M. D.,
Instructor of Obstetrics in the Medical Department of the University of Vermont.

For many years obstetricians have accepted as correct the statement made by Naegele—who, in turn, based his opinions on the writings of Vesalius, Levret, and Smellie—that in the mechanism of labor the child, in its passage from the uterus, traversed a curved canal, meeting with no resistance other than would naturally be present in an undilated canal.

The axis of the bony pelvis is the union of the axes of the inlet, cavity, and outlet, and is represented by a curve or an arc of a circle. Obstetricians have taught that the soft parts in the floor of the pelvis formed, in labor, a continuation of this curve, carrying it on beyond the bony

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pelvis. Carus even going so far as to assert that a pair of compasses, with one leg placed on the symphysis pubis of a bisected pelvis, the other in the axis of the superior strait, would sweep around a circle one-half of which would represent the axis of the pelvis. Others modify this curve somewhat, and say that it is represented by the curve of an irregular parabola. The investigations of Fabbri, Sabbatier, Boissard, and Varnier show these theories to be incorrect, and I trust that I may be able to demonstrate to you the fact that the axis of the parturient canal, instead of being curved, is made up from two straight axes crossing each other

Fig. 1.*

at an angle of about 95°. This angle we will call the Utero-Vaginal Angle. Parvin quotes Varnier as speaking of it as the "angle of entrance and exit," but I prefer to use the term "utero-vaginal," as it needs no explanation.

How is this angle formed? The axis of the uterus at term is represented by a line drawn from a point midway between the umbilicus and the ensiform cartilage to the middle of the coccyx. The axis of the vagina is represented by a line drawn from the upper portion of the ori-

*From Munde's "Minor Surg. Gyn.," 2d Ed.

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fice of the vagina to the lower part of the third sacral vertebra. These lines cross, at an angle of about 95°, at a point on the floor of the pelvis a little above (in the line of the uterine axis) the tip of the coccyx. The uterus and vagina together form a muscular tube having a blind upper extremity, and bent on itself in such a way that it might be likened to an elbow in a stove pipe. (See Fig. 1.) This bend forms the utero-vaginal angle, and performs, as we shall see, a very important part in the mechanism of labor.

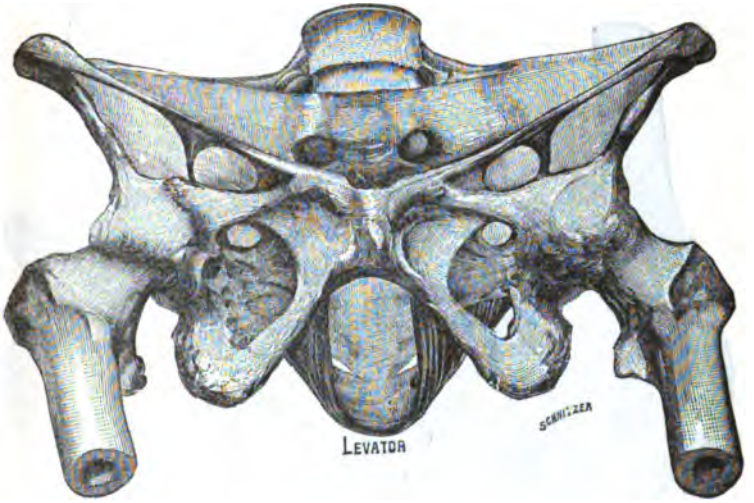

Fig. 2*.

Before discussing the mechanism of labor let us glance at the anatomy of the floor of the pelvis, which is composed of muscles; fascia, connective tissue, blood vessels, nerves, etc., and is in reality the bottom of the pelvic basin. The most important structure in the pelvic floor, and the only one we will examine, is the levator ani muscle, which "arises in front from the posterior surface of the body and ramus of the pubes

* Dickinson, Am. Jour. Obstet., 1889.

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on the outer side of the symphysis, posteriorly from the inner surface of the spine of the ischium, and between these two points, from the angle of division between the obturator and vesico-rectal layers of the pelvic fascia at their lowest part. The fibres pass downward to the middle line of the floor of the pelvis, and are inserted, the most posterior fibres into the sides of the apex of the coccyx, those placed more anteriorly unite with the muscle of the opposite side in a median fibrous raphe which extends between the coccyx and the margin of the anus. The middle fibres, which form the larger portion of the muscle, are inserted into the sides of the rectum, blending with the fibres of the sphincter muscles,

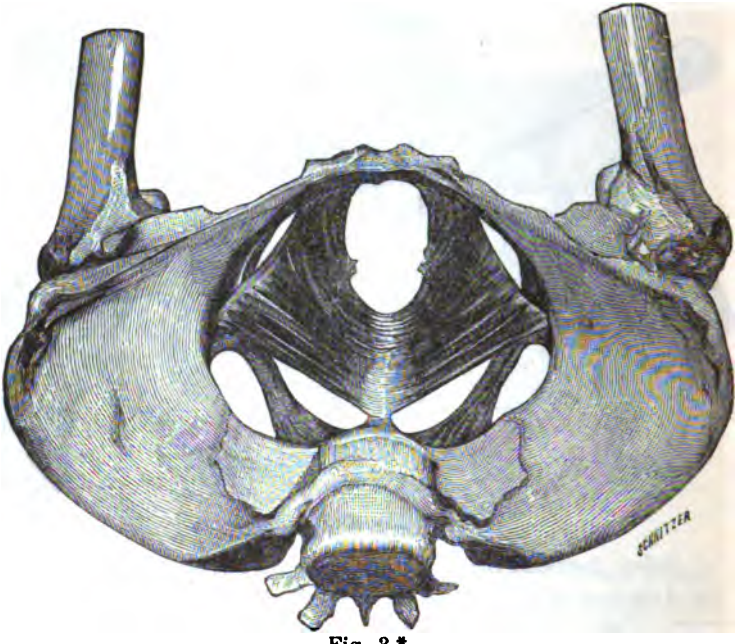

Fig. 3.*

and the anterior fibres become blended with the longitudinal fibres of the vagina and with the external sphincter and transversus perenei muscles." It is reinforced by the other perineal muscles and by the strong pelvic fascia.

It must readily be seen, from this description of the origin and insertion of the muscle, that, when united with its fellow of the opposite side, a horseshoe-shaped trough or gutter is made (see Fig. 2), and that the

*Dickinson, loc cit.

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sides of this gutter, being smooth, would naturally tend to carry any object impinging on them to the lowest point of junction, which is in the median line; and as the bottom of this trough slopes anteriorly, the object would be carried on toward the vaginal orifice in exactly the same way that water runs off a roof into the eaves-trough, thence to the ground. (See Fig. 3.)

Bearing in mind that the axis of the uterus crosses the axis of the vagina at an angle of about 95°, let us consider the mechanism of labor, taking first the occipito-anterior positions. First there is flexion, then descent of the head through the pelvis *in a straight line* (following the

Fig. 4.

line of the axis of the uterus) until it reaches the side of the trough at the floor of the pelvis; then it begins to rotate from the oblique diameter in which it started to the antero-posterior diameter. When the head reaches the bottom of the trough it has fully rotated—*i. e.*, the occipito-frontal diameter of the head corresponds with the antero-posterior diameter of the pelvic trough—and, being at the extreme end of the uterine canal, can of course go no further *until* extension begins. Why? The head, being at the lower extremity of the uterine canal, can go no further in that direction; but on the anterior side of this extremity is the vaginal canal, placed, as has already been stated, at an angle of about 95° with

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the uterine canal. In other words, the head is at the utero-vaginal angle, which it can pass only by extension, and that is accomplished in the following manner: The uterine contractions are constantly crowding the child down into the pelvic groove, the pressure being exerted through the spine to its junction with the head. The result of this crowding down must be that the head will either be extended or further flexed. It cannot be further flexed, because the chin already rests on the sternum; consequently it must be, and is, extended, and in this way: The head is now in the hollow of the sacrum and fully flexed on the body. Its progress is barred in every direction save one, viz., the opening into the vaginal canal. Pressure from above tends to force the occiput in the direction where there is least resistance; the head glides over the smooth surface of the sacrum, and extension begins. (See Fig. 4.) This allows the body to descend a little, which pushes the occiput still further into the vaginal canal, thereby increasing the extension. This process continuing, more and more of the head is forced around the angle, until the occiput emerges from the vaginal orifice under the pubes, when it is immediately followed by the forehead, nose, and chin. Meanwhile, a shoulder being forced down against the side of the groove causes the body to rotate, the shoulders are pushed around the angle, the body is bent laterally, and the shoulders are delivered in precisely the same manner that the head was, *i.e.*, by being bent around the angle and under the pubes. The hips follow the same course, and, being smaller, are easily forced through the now greatly dilated canal.

In occipito-posterior cases, when anterior rotation does not occur, labor is much more difficult—not, as we have been taught, because it takes the occiput so much longer to sweep over the perineum, but because it is extremely difficult for an already flexed head to be further flexed so that it may pass the utero-vaginal angle.

The head in occipito-posterior positions, when it reaches the extremity of the uterine canal, is flexed on the body; and as pressure is exerted through the spine in the same mannér as in occipito-anterior positions, the tendency is to do one of two things: either to begin extension by crowding the face into the vaginal opening, thus converting it into a face presentation, or to still further flex the head on the body. In the latter case it takes so long to turn the angle that the head is moulded so that it may be adapted to the canal; and even then, unless the back bends a little, it is doubtful if it can be delivered unassisted. But the back bends a little, the head passes the angle, and finally the parietal protuberances emerge from the vaginal orifice under the pubes, followed by the forehead, nose, and chin, and, as the text books say, "the head is extended over the perineum," while in reality it drops on to the perineum simply of its own weight. At the same time the shoulders come down and are

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Fig. 5.

delivered as in occipito-anterior cases. In occipito-posterior cases the perineum is enormously distended, because the head cannot be flexed to a right angle with the body, and an imperfectly bent object is being forced around the angle. (See Fig. 5.)

In face presentation, mento-anterior, there is extension, descent to the pelvic trough, rotation, and, in precisely the same manner as in occipito-anterior cases, the *face* is pushed into the vaginal canal, and *flexion* begins. (See Fig. 6.) The face is forced further and further into the vagina, increasing the flexion, until the chin emerges under the pubes, followed by nose, forehead, and occiput. Meanwhile the body descends, rotates, and is delivered as in occiput cases.

In mento-posterior cases, when anterior rotation of the chin does not occur, there is extension, descent, rotation, and further progress is impossible. Why? Because the head is fully extended on the body, and when it reaches the extremity of the uterine canal it cannot be further extended so as to allow it to pass the utero-vaginal angle. The body cannot be bent backward sufficiently to allow the head to pass the angle, therefore labor is arrested—not because the neck is 1½ inches long, and the chord of the sacro-coccygeal curve is 4½ inches long, nor because the sternum impinges on the sacral promontory, but

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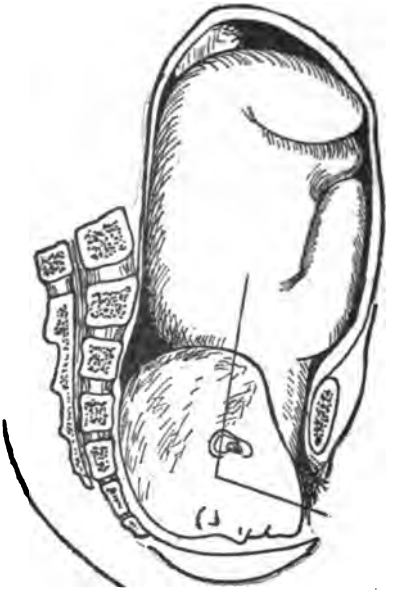

FIG. 6.

it is arrested because a fully extended head cannot be further extended, therefore there is no more possibility of forcing the face around the angle into the vagina than there is of forcing a stiff straight stick through the elbow of a stove pipe. (See Fig. 7.)

In breech cases the same forces are at work in the same manner as in head cases. The breech is forced straight down to the floor of the pelvis, rotation occurs, the hips are gradually forced around the utero-vaginal angle, the body is bent laterally, the shoulders rotate and pass the angle while the neck is bent, the head rotates turns the angle by flexion, and the child is born. When the after-coming occiput rotates posteriorly, the head may be delivered either by extension or flexion, as the case may be. In either case the uterine contractions cause the head to glide over the smooth surface of the sacrum, the head and sacrum resembling, for the time being, a ball-and-socket joint. Proof that the child passes through an angular instead of a circular canal is found in the fact that in breech cases, when the legs are extended over the abdomen, labor is greatly delayed for the reason that the legs cannot be bent

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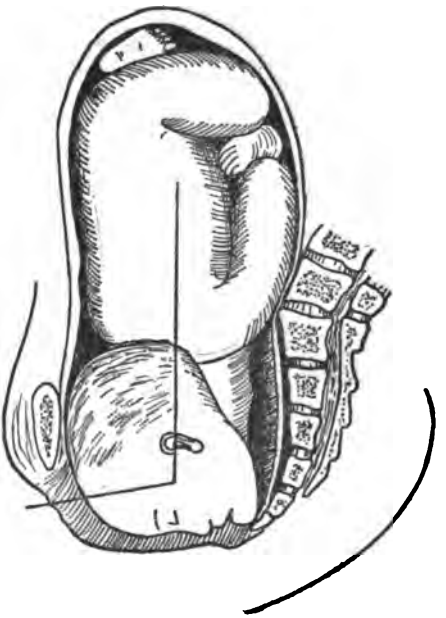

FIG. 7.

laterally, consequently there is much greater difficulty in bending the body laterally sufficiently to allow it to pass the angle, the legs acting somewhat as a splint.

In King's "Manual of Obstetrics" is a cut showing an arrested spontaneous evolution, in a transverse presentation, which beautifully illustrates the utero-vaginal angle. In such a case it would, of course, be impossible to deliver the child. (See Fig. 8.)

I shall not speak of the management of labor, as that remains unchanged; but several questions have suggested themselves to my mind, to which I should like to direct your attention: First. In a forceps delivery, when the head is at the superior strait we should make traction in the line of the axis of the uterus until the pelvic floor is reached, this being done by grasping the shank of the forceps with the left hand at the vaginal orifice, while the right grasps the ends of the handles and lifts them up, thus making the right hand the power and the left hand the fulcrum, the child's head being the resistance, as described by Pajot.

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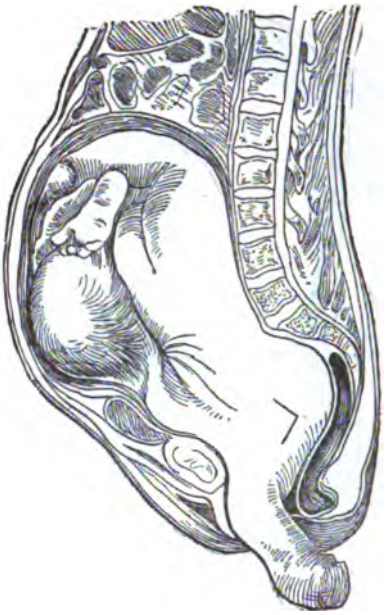

FIG. 8.

In this way no power is lost; while if we make traction in the direction of the curve of the sacrum, power is lost, as the child's head will, to a certain extent, impinge on the pubes. As soon as the head reaches the utero-vaginal angle, traction should be made in the direction of the vaginal axis.

Second. Is not the birth of the child through the anus (a most unfortunate and distressing accident that has sometimes happened) rather strong proof that there is an angle in the canal, and that the uterine contractions were so strong that the head had not sufficient time to pass the angle and was forced in a nearly straight line through the soft parts?

Third, Is not the fact that, when the head has reached the floor of the pelvis, the pain increases in severity, the head advancing with a pain and receding upon its cessation—extending and flexing, gliding over the smooth sacrum—evidence against a curved-canal theory? For if the canal were circular there would be no arrest of progress, any more than there is in the rectum. The apparent curving of the vaginal canal is simply the distention of the perineum to adapt it to the contour of the child's head.

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Fourth. When the head is about to emerge from the vaginal orifice, the lower part of the woman's abdomen is much more prominent than at any previous time, because the head and body are at right angles with each other, the head being extended or flexed as the case may be; and if the case be occipito-anterior, the child's face may be felt through the perineum.

The question might be raised that it is impossible for the head to be delivered by simple extension or flexion, as the neck is not long enough to reach from the utero-vaginal angle to the vaginal orifice. This can be answered by giving the length of this portion of the canal, which in the parturient woman measures from one to one and one-half inches.

Do the bones of the pelvis exert the influence on the mechanism of labor that they are credited with? This question may seem entirely uncalled for, but let us consider a moment. The pelvis is a bony ring supporting the trunk, and in turn supported by the legs. It is shaped to give strength and elasticity to the entire body, and to accommodate, in the female, the uterus and its appendages, the rectum, and the bladder. That it exerts but slight influence on the mechanism of labor is shown by the thickening of the interarticular fibro-cartilage and the movability of the pelvic articulations, so that when the child descends the bones may be seperated a little, or, in other words, that they may, to a certain extent, be pushed out of the way. The hollow of the sacrum does not cause the head to advance toward the vaginal outlet, for the reason that the shape of the head corresponds to the shape of the anterior surface of the sacrum, and when the head reaches the floor of the pelvis it fits into the sacrum, exactly as the head of the femur fits into the acetabulum, and the sacrum, like the acetabulum, furnishes a smooth socket in which the head moves, governed by the uterus above and the utero-vaginal angle below.

To sum up in a few words my theory of the mechanism of the labor; The head starts in the oblique diameter of the pelvis, descends in a straight line through the uterine axis to the floor of the pelvis, where it comes in contact with the levator ani muscle trough and rotates into the antero-posterior diamater. When it reaches the bottom of the trough

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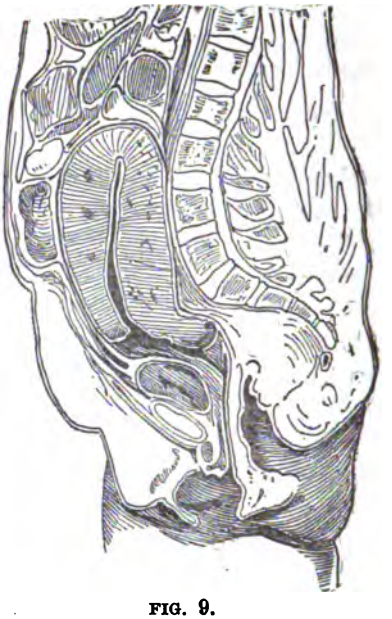

FIG. 9.

it stops, as it can go no further in that direction. Then extension begins: the occiput is forced around the utero-vaginal angle until the head is fully extended, by which time the occiput emerges under the pubes, and immediately afterwards the head is delivered. Meanwhile the shoulders come down, rotate, are forced around the angle, the body is bent laterally, and the shoulders are delivered; and in the same manner the hips are delivered.

After delivery of the placenta the parts resume their former relations, and with the exception of the enlarged uterus, appear as they did before pregnancy. (See Fig. 9.)

In the preparation of this paper I consult the works of King, Lusk, Playfair, Parvin, Skene, Dickinson, Thorburn, and Gray, and wish at this time to make acknowledgment of the fact.

I am indebted to William Woods & Co., Medical Publishers, New York, for the cuts illustrating the article.

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OBITUARY.

CHARLES MARCELLUS CHANDLER, M. D.

By Dr. Henry Janes, Waterbury, Vt.

Charles M. Chandler was born in the town of Tunbridge, Vt., July 1st, 1827. His father was Dr. Chas. B. Chandler, late of Montpelier, Vt.

Marcellus received his education at Chelsea and Bradford, Vt. After leaving academy he was engaged for several years in teaching and as a clerk in a country store.

In 1850 he began the study of medicine, which he continued for four years under his father's tuition but attending the winter courses of lectures at the Harvard Medical College, Boston, where he graduated in 1854.

After graduation he went into practice with his father, at Tunbridge, where he remained about a year. He then went to South Strafford where he practiced until the time of his marriage.

In 1860 he married Miss Abby Hazen, of Peekskill, N. Y., and removed to Montpelier.

In the fall of 1861 he was commissioned Surgeon to the 6th Regiment Vt. Vols. During the fall and winter of 1861 his regiment was stationed near Washington, at Chain Bridge, Va. While in this camp he was attacked with pneumonia, and afterwards with pleurisy, with a large effusion in the left chest. He recovered slowly, but with much contraction of the side. He, however, kept with his regiment during the Peninsular campaign of 1862 and was present at the battles of Lee's Mills and Williamsburgh. He was subject to much exposure and fatigue on the Peninsula, and when, after the disastrous seven days fights—during which there was a battle every day and a march every night,—the army arrived at Harrison's Landing, he was seriously ill with typhoid malarial fever and partially delirious, though still trying to do his duty in his regiment which had a large sick list. Against his protestations,—for at

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that discouraging time when so many were doing their best to get away, the doctor was determined to stick to his post,—it was necessary to put him on board a transport by main force and send him to Washington for treatment. He was sick and delirious for three or four weeks, but returned to the post as soon as able to travel, and was with his regiment at the battles of South Mountain and Antietam, Sept. 14th and 16th, 1862.

In the fall of 1862 he was placed in charge of a large hospital at Hagerstown, Md. I think he was at the first battle of Fredericksburgh, in December, 1862, but am not certain.

He was one of the operating surgeons in the hospital of the 2nd Divis. 6th Corps at the second battle of Fredericksburgh, in May, 1863. After the wounded in our own hospitals had been perfectly attended to, and sent to the more permanent hospitals in the rear, he went with a flag of truce into the enemy's lines for the purpose of attending and getting off several hundred of our wounded who had been taken prisoners.

He was at the battle of Gettysburgh, and immediately afterwards went with his regiment to New York City, where the 1st Vermont Brigade had been ordered to aid in the suppression of the draft riots.

He was obliged to resign his commission on account of urgent family affairs in September, 1863; but immediately after the Wilderness battles in May, 1864, he again came to the front as a volunteer, but afterwards accepted the position of Acting Assistant Surgeon, in which capacity he remained in the service until the close of the war; a part of the time on the Hospital Steamer, State of Maine, and afterwards at the Sloan U. S. A. General Hospital.

After the close of the war Dr. Chandler resumed his private practice in Montpelier, and soon built up a large business, which, however, was never very lucrative on account of his extreme reluctance to accept any pecuniary returns for his services.

He was pension examiner from to In 1878 he was elected President of this Society, and was several times delegate to the American Medical Association.

Dr. Chandler's health was much injured by his army experience and during the last years of his life he became quite deaf, and suffered from severe attacks of anguina pectoris on any exertion. Although expecting to die at any moment he did not, however, refuse to give his services to the sick and suffering, though often his patients needed care less than their physician.

In the night of Tuesday, March 18, 1889, he was taken very ill, and the next day became hemiplegic on the left side. On the following Friday pneumonia of the right side set in, the fatal termination of which was a foregone conclusion, on account of the crippled condition of the left lung resulting from the pleurisy of his army experience. He died March 19.

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Dr. Chandler had a small, but well knit frame, and when a young man was unusually strong and agile.

He was too modest and unassuming to be a stern disciplinarian, but in the whole army there was no more zealous, indefatigable or brave officer; and personal bravery of the highest kind is needed in the Army Surgeon, for he is expected to face, unflinchingly, without the excitement of battle or the hope of glory, dangers from which the bravest, so called, fighting officer shrinks appalled. Dr. Chandler was one of the officers who could always be relied on in any emergency; his brain was never muddled with stimulants; difficulties and dangers, instead of causing him to give up in despair, only inspired him to greater efforts.

He was a skillful but sympathetic surgeon; an excellent diagnostician, but too modest to always strenuously maintain his own views when they were opposed to those of his consultants. He was strictly temperate in his habits, and singularly unselfish,—indeed the commercial element seemed to be entirely eliminated from his professional life. He was a kind husband and indulgent father, and his family relations were unusually happy. His wife survives him, as do his two children, the present Dr. Charles E. Chandler, of Montpelier, and his daughter Anne.

Dr. Chandler lived too busy a life to have much time for authorship, and I am not aware that he wrote anything for publication except an occasional paper read before this Society.

Pardon me, gentlemen of the Medical Society, for a few words in conclusion, which may seem too personal and out of place in a formal obituary notice. I first became acquainted with Dr. Chandler when he came into the field with his regiment, in the late fall of 1861, but from that time on we were much thrown together; we camped on the same cold and soaking ground; we marched through nights seemingly interminable, when human endurance was stretched to its utmost; we walked through the same miasmatic swamps, and rivers of mud; we were near each other in the same shower of hissing bullets, and screaming shells; during the horrid nights after the battles we worked together among the same crowds of mangled and dying humanity; we toiled side by side for many long days among the festering and gangrenous wounds of the soldiers hastily gathered up from the battle fields or famishing in the enemy's lines; and we were together among the fevered and infected sick, in the more permanent hospitals. Will you wonder then, that "the flood of thoughts rushing o'er me" prevents adequate expression by words? He had become to me more than a brother.

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CONSTITUTION AND BY-LAWS

OF THE

Vermont State Medical Society.

(As revised October, 1887.)

CONSTITUTION.

ARTICLE I.—NAME.

This Society shall be called the Vermont State Medical Society.

ARTICLE II.—OFFICERS

The officers of this Society shall be a President, Vice-President, Secretary, Treasurer, Auditor, Publication Committee of three members, Executive Committee of three members, of which the Secretary shall be one *ex officio*, Board of Councillors, consisting of one from each county, and a board of License Censors, consisting of three members, all of whom shall be elected annually at the opening of the second day's session, by ballot when demanded by any member present, or in such other manner as the Society shall direct, and shall hold their respective offices until the close of the next annual meeting, and until others are chosen.

ARTICLE III.—MEETING.

There shall be an annual meeting of this Society held on the first Thursday and Friday after the second Wednesday in October, in Montpelier, each year of the Legislature, and the annual meeting in the off year of the Legislature shall be held in Burlington, and a semi-annual meeting at such place as the Society shall direct, on the last Thursday and Friday in June.

ARTICLE IV.—MEMBERSHIP.

Any physician residing within the State, who is a graduate of a regular recognized Medical School, may become a member of this Society at any regular meeting, upon recommendation of the Board of Councillors and vote of the Society, by signing the Constitution and paying the sum of two dollars to the Treasurer.

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ARTICLE V.—Discipline.

Any member of the Society guilty of intoxication, unprofessional or irregular practice, or of gross immorality, or for other good reasons, may be expelled or suspended from the Society by a vote of two-thirds of the members present at any annual meeting.

ARTICLE VI.

This Constitution may be repealed, altered or amended at any annual meeting, by a vote of two-thirds of the members present, provided such repeal, alteration or amendment be proposed at a previous annual meeting at which such repeal, alteration or amendment will come up for action.

ARTICLE VII.

This Society may adopt such By-Laws, not repugnant to this Constitution, and may repeal, alter or amend the same, in such manner as a majority at any annual meeting may deem proper.

BY-LAWS.

ARTICLE I.—Duties of Officers.

Sec. 1. The President shall preside at all meetings and perform all the duties incident to such office. He shalll deliver or cause to be read an address or dissertation on some medical subject at the annual meeting at which he presides.

Sec. 2. The Vice-President shall preside in the absence of the President, and perform all his duties and possess all his privileges. He shall deliver or cause to be read, an address, on the evening of the first day of the semi-annual meeting.

Sec. 3. The Secretary shall keep a record of the proceedings of the Society, and of the members present at each meeting; shall arrange and publish the programme at least two weeks before each meeting; shall conduct the correspondence; and shall have his necessary expenses defrayed from the funds of the Society. He shall, if unable to attend the meeting of the Society personally, send the Records to some member in attendance.

Sec. 4. The Treasurer shall collect and disburse all monies of the Society, agreeable to their directions, and make report of his doings to the Society at its annual meeting.

Sec. 5. The Auditor shall examine and verify the accounts of the various officers.

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SEC. 6. The Executive Committee shall make selection of a subject or subjects for the programme for the next ensuing meeting; shall make assignments of the parts to any of the members, as in their judgment they think advisable, and report the same to this meeting and to each and every subsequent meeting.

They shall make such other arrangements for the meetings of the Society as they shall deem essential for its best interests.

They shall select the place and time of holding the semi-annual meeting, and shall report the same to the Society at the annual meeting.

SEC. 7. The Publication Committee shall receive all papers referred to them by the Society, and as soon as possible subsequently to the annual meeting of the Society, shall publish such of those papers as they may deem best suited to promote the interests of the profession and the public good, under the title, Transactions, and perform all other appropriate duties.

SEC. 8. The Board of Councillors shall choose its own officers and make its own regulations, providing they do not conflict with the Constitution and By-laws of this Society.

There shall be a meeting of said Board on the first day of the annual and semi-annual meetings, and at such other times as the Board shall determine.

The duties of said Board shall be to examine the credentials and qualifications, with reference to their method of practice, etc., of persons desirous of becoming members of the Society, and present at each meeting the names of such as, in their opinion, are eligible to membership under the Constitution and Regulations of the Society, and to report the names of members deceased, if any, and recommend such action in each case as they may deem best. The Councillors shall recommend for membership, only such physicians as shall present to them their diplomas, or a certificate in writing signed by some member of this Society in good standing, stating that he has personal knowledge of said applicant having a diploma of a regular medical school.

SEC. 9. It shall be the duty of the Board of License Censors to issue license certificates to regular physicians wishing to practice medicine in this State, in accordance with the State law regulating such practice.

ARTICLE II.—DUES.

SEC. 1. Every member of this Society (honorary excepted) shall pay to the Treasurer an annual fee of two dollars.

SEC. 2. Any member who shall fail to pay his dues for a period of three years, shall be dropped from the Society, and his name stricken from the roll of membership, and he shall be so notified by the Secretary.

SEC. 3. Any member who has been dropped from the Society for non-payment of dues may be re-elected after any number of years by a

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vote of three-fourths of the members present at any regular meeting, upon payment of the three years' arrearages.

ARTICLE III.—HONORARY MEMBERS.

The Society may elect at each annual meeting, not more than four honorary members, non-residents of the State, who shall have the same privileges as ordinary members, except that they shall not be eligible to office, nor have the right to vote.

ARTICLE IV.—DELEGATES.

Delegates shall be appointed annually to represent this Society in the American Medical Association; the Medical Department of the University of Vermont and of Dartmouth College at the examination of candidates for graduation, when duly notified; the Connecticut River Valley Medical Society; the White Mountain Medical Association; the White River Valley Medical Association; the Northern New York Medical Association; the State Medical Societies of the New England States together with those of New York, and such other States and Societies as the mutual interests of the societies may direct.

In cases where delegates are unable to attend to the duties of their appointment, it shall be their duty to notify the Secretary, of such inability, and the Secretary and President shall appoint others to supply their places.

ARTICLE V.

Every member who is appointed to prepare a paper for any meeting shall, at least thirty days before such meeting, furnish to the Secretary a short abstract of the same, which abstract, or an epitome of which, the Secretary shall cause to be printed in the programme, following the announcement of the paper.

ARTICLE VI.

Any member wishing to withdraw from the Society shall be permitted to do so on his written request after he shall have presented the Treasurer's receipt for all monies due.

ARTICLE VII.

The Constitution and By-Laws, together with the names and residences of the members in good standing, shall be published in every volume of the Transactions.

ARTICLE VIII.

The names of deceased members of the Society, with the dates of birth, graduation, admission to membership, death and such other items in brief, of personal history, as may seem desirable to the Committee on Publications, shall be printed in each copy of the Transactions under the caption, "In Memoriam."

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LIST OF MEMBERS.

The following are the list of the members of the Society.

Allen, Joel Johnson.
Adgate, L. W. East Hardwick.
Albee, E. S. Bellows Falls.
Andrews, B. J. Burlington.
Allard, J. F. E. Winooski.
Briggs, Geo. C. Burlington.
Bingham, L. M. Burlington.
Brown, H. S. St. Johnsbury.
Bradford, P. D. Northfield.
Bullard, G. B. St. Johnsbury.
Brooks, S. T. "
Bailey, A. C. West Randolph.
Blanchard, F. Peacham
Brewster, J. D. Windsor.
Brigham, C. W. Pittsfield.
Bisbee, A. B. Montpelier.
Bishop, E. H. Jericho.
Branch, C. F. Newport.
Boynton, Henry Woodstock.
Bingham, A. L. Williston.
Brush, E. R. Cambridge.
Baxter, E. K. Sharon.
Bartlett, H. O. Milton.
Bryant, W. H. Ludlow.
Bruce, M. L. Brattleboro.
Burdick, L. F. Winooski.
Bugbee, A. G. Derby Line.
Bates, E. A. Highgate Center.
Brigham, F. L. Pittsfield.
Blake, W. C. Lyndon.
Burnett, D. L. Stowe.
Clark, S. S. St. Albans.
Carpenter, Walter Burlington.
Cilley, F. H. Jericho.
Cutting, H. A. Lunenburgh.
Clarke, J. M. Burlington.
Campbell, E. R. Bellows Falls.
Church, W. G. Stowe.
Crain, M. R. Rutland.
Caverly, C. S. Rutland.
Camp, C. F. Barre.
Currier, W. H. Hartford.
Chandler, C. E. Montpelier.
Crandall, H. A. Burlington.
*Chesmore, A. H. Huntington.
Carver, H. S. Marshfield.
Cooty, Thomas A. Mt. Holly.
Carpenter, F. W. West Rupert.
Chase, R. M. Bethel.
Draper, Joseph Brattleboro.
Dunsmore, George St. Albans.
Dyer, O. G. Brandon.
Davenport, S. E. Hardwick.
Darrah, A. J. Enosburgh.
Davis, B. W. Montgomery.
Davies, A. Burlington.
Dana, E. P. South Royalton.
Erwin, C. L. Newport Centre.
Eddy, M. H. Middlebury.
Fairman, E. P. Wolcott.
Fish, E. J. South Royalton.
Fox, G. H. Rutland.
Foster, George S. Putney.
Flanders, L. W. Burlington.
Field, A. E. Barre.
Ferrin, C. M. Essex.
Flanders, G. W. E. Fairfield.
Green, L. M. Bethel.
Grinnell, A. P. Burlington.
Griswold, S. H. Rutland,

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Gale, H. L. Barre.
Goodrich, V. A. Brookfield.
Grout, D. D. Stowe.
Giddings, W. H. Bakersfield.
Goodall, F. W. Bennington.
Goss, S. W. Chelsea.
Gillett, H. H. Post Mills.
Howe, H. T. J. Waitsfield.
Holton, H. D. Brattleboro.
Huntington, W. M. Rochester.
Hutchinson, Wm. R. Enosb'gh Falls.
Hamilton, J. H. Richford.
Hunt, C. H. Worcester.
Hooker, E. G. Waterbury.
Hanrahan, J. D. Rutland.
Howe, H. H. Weston.
Hawley, D. C. Burlington.
House, C. P. Royalton.
Hall, E. J. Morristown.
Hopkins, W. S. Vergennes.
Hinman, C. S. West Charleston.
Hutchinson, W. W. Enosburgh.
Hawley, C. F. Fairfax.
Hazelton, D. W. Springfield.
Hazleton, W. F. Springfield.
Janes, Henry Waterbury.
Jackson, J. H. Barre.
Johnson, R. T. West Concord.
Jennings, C. G. R. Bennington.
Jenne, J. H. St. Albans.
Jones, H. R. Benson,
Jacobs, C. W. Richmond.
Jackson, J. W. Barre.
Jones, S. A. Sheffield.
Keenan, J. C. Rutland.
Kemp, D. G. Montpelier.
Kidder, F. T. Woodstock.
Kinney, F. C. Greensboro.
Ketcham, F. J. Pittsford.
Kincade, R. M. Highgate Centre.
Kenyon, H. B. Townshend.
Locke, C. W. Grafton.
Lane, George E. Ludlow.
Linsley, Jo H. Burlington.
Ladue, F. L. Alburgh Springs.
Lee, H. H. Wells River.
Lund, W. B. Burlington.
Langdon, S. W. Sheldon.
Leach, C. L. Swanton.
Letourneau, A. A. Burlington.
Lawton, S. E. Brattleboro.
Lamb, W. D. Barre.
Munger, E. S. Putney.
McSweeney, P. E. Burlington.
Miller, A. J. Brattleboro.
Moody. A. E. Isle La Motte.
Maynard, L. A. Burlington.
Morgan, F. C. Felchville.
Nutting, D. H. Randolph.
Newell, H. L. Proctor.
Nichols, George B. Barre.
Porter, Edwin Northfield.
Peck, C. W. Brandon.
Phelps, O. W. Bellows Falls.
Perry, C. C. Bethel.
Paige, S. W. St. Albans.
Prime, W. R. Burlington.
Petty, C. W. Keeler's Bay, So. Hero.
Pelton, R. M. Richford.
Pond, E. M. Rutland.
Peck, O. W. Winooski.
Reid, W. D. Barre.
Rodeman, H. L. Bridgewater.
Richmond, J. S. Windsor.
Rugg, D. F. Hartland.
Rodgers, Lyman Bennington.
Richmond, Dean Windsor.
Russell, C. J. Hinesburgh.
Robinson, F. D. St. Albans.
Rood, L. D. Jericho.
Rutherford, Jacob C. Burlington.
Rutherford, Joseph C. Newport.
Ross, C. B. West Rutland.
Reilly, J. H. Rutland.
Smith, C. C. Gaysville.
Skinner, R. B. Barton.
Sperry, C. A. Quechee.
Scott, C. A. Tyson.

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Sherwood, R. St. Albans.
Swift, H. H. Pittsford.
Sherwin, O. W. Woodstock.
Stoddard, F. H. Shelburne.
Shaw, E. M. Barnet.
Strobell, C. M. Middletown Springs.
Shipman, E. W. Vergennes.
Senton, B. C. Rutland.
Stewart, W. E. Wallingford.
Stiles, T. R. St. Johnsbury.
Stoddard, R. O. New Haven.
Stimson, E. P. West Randolph.
Tinkham, H. C. Burlington.
Trull, E. V. Manchester.
Upham, E. F. West Randolph.
Vincent, W. H. Orwell.
Varney, W. H. H. Charlotte.
Warren, M. D. Cabot.
Woodward, A. T. Brandon.
Woodward, J. H. Burlington.
Worthen H. O. Barre.
Wiswell, S. L. Cabot.
Wilder, H. R. Swanton.
Willard, A. J. Burlington.
Wheeler, J. B. Burlington.
White, P. P. Williamsville.
Warner, M. D. Cabot.
Willard, G. F. B. Vergennes.
Whipple, E. O. Danby.
Welch, R. E. Franklin.
Woodhull, J B. S. Shaftsbury.
Watson, E. B. Williamstown.

* Deceased.

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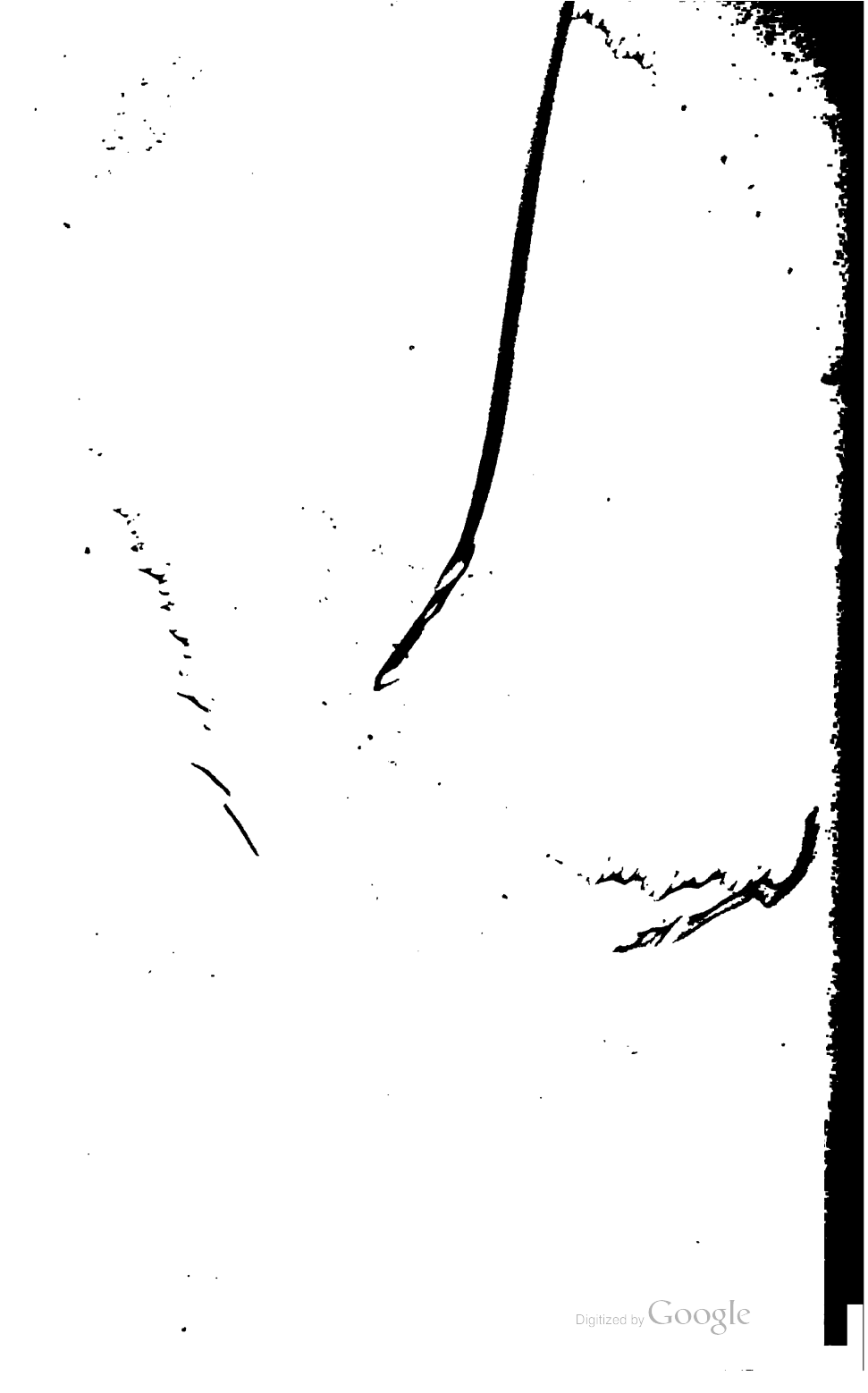
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FEB 25 1902
B. H. B.

TRANSACTIONS

OF THE

VERMONT

STATE MEDICAL SOCIETY

FOR THE YEAR 1891.

PUBLISHED BY THE SOCIETY.

BOSTON MEDICAL
FEB 25 1902
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ANNUAL MEETING ON THE [illegible] AND FRIDAY AFTER
THE SECOND WEDNESDAY IN OCTOBER, AT SUCH PLACE
AS DESIGNATED AT THE PREVIOUS [illegible]

Place of Meeting in 1892, Montpelier.

BURLINGTON, VT.
H. S. STYLES, BOOK AND JOB PRINTER.
107 Saint Paul Street.

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TRANSACTIONS

OF THE

VERMONT

STATE MEDICAL SOCIETY

FOR THE YEAR 1891.

PUBLISHED BY THE SOCIETY.

ANNUAL MEETING ON THE FIRST THURSDAY AND FRIDAY AFTER THE SECOND WEDNESDAY IN OCTOBER, AT SUCH PLACE AS DESIGNATED AT THE PREVIOUS ANNUAL MEETING.

Place of Meeting in 1892, Montpelier.

BURLINGTGN, VT.:
R. S. STYLES, BOOK AND JOB PRINTER.
107 Saint Paul Street.

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TRANSACTIONS

OF THE

Seventy-Eighth Annual Meeting

OF THE

VERMONT STATE MEDICAL SOCIETY,

Held in Burlington, October 15 and 16, 1891.

The Seventy-eighth Annual Meeting of this Society was called to order in the Y. M. C. A. Block, Burlington, Vt., at 10 o'clock A. M., October 15, by the President, Dr. J. N. Jenne, of St. Albans. Prayer was offered by the Rev. F. E. Dewhurst, of Burlington.

The records of the last annual meeting were read and approved.

Dr. F. R. Stoddard, of Shelburne, moved that a nominating committee of five be appointed by the Chair, and it was so ordered.

Dr. W. D. Huntington, of Rochester, made the following report of Delegates to Dartmouth Medical College:

To the President and Members of the Vermont State Medical Society:

Your delegates to attend the final examinations of Dartmouth Medical College, respectfully report: That they visited Dartmouth Medical College on Monday and Tuesday, November 24 and 25, 1890, and with the delegates from the New Hampshire State Medical Society, proceeded to the examination of the candidates for the Degree of Doctor of Medicine. All the candidates, previous to our visit, had passed a written examination before the various professors, in the different branches of Medicine. The examination papers and the marking thereon by the Faculty were open to our inspection. There were 41 candidates in all, and of these 30 had attained the average required by the Faculty. These 30 passed individually before the delegates, and were examined orally by each of us. No candidate was finally passed who did not receive a majority vote of the delegates. Of the 30 examined by us one was rejected. Thus, out of a class of forty-one, twelve, or twenty-nine per cent., were rejected.

Your delegates were very cordially received by the Medical Faculty, and were accorded every opportunity to acquaint themselves with the

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qualifications of the students, and of the general character of the instruction given in the school, as evidenced thereby. And we are very happy to report that in our estimation, the instruction given in this School is broad and thorough and up to the requirements of the times.

W. D. HUNTINGTON, M. D.,
D. C. HAWLEY, M. D., } Delegates.

Dr. C. F. Camp, of Barre, Delegate to the Medical Department University of Vermont, presented his report as follows:

BARRE, VT., OCTOBER 15, 1891.

To the Vermont State Medical Society:

MR. PRESIDENT AND GENTLEMEN—As one of your delegates, appointed to attend the examinations of the candidates for the Degree of Doctor in Medicine, at the Medical Department of the University of Vermont, I beg leave to report as follows:

That I attended these examinations alone, my fellow delegate, Dr. Stiles, not being present. That the examinations were conducted in the most thorough and satisfactory manner.

Anatomy, Obstetrics, Theory and Practice were oral. Chemistry, Materia Medica, Surgery and Physiology were written. Anatomy being principally upon the cadaver, thereby giving every student a chance to show his knowledge to the best advantage.

There were eighty-four who came up for examination for their degrees; of these, fifteen failed and sixty-nine passed. Ten came up for examination upon primary branches, most of whom passed satisfactorily.

That those who succeeded were well up to the standard in the medical profession, and will grace the fraternity in whatever field they may locate.

The one thing lacking is some Vermonter or other friend to immortalize his name, and the Medical College, with a legacy, thus enabling the Faculty to accomplish the much desired scheme of grading the course, thereby bringing the school into the fore front rank with large city schools.

Respectfully submitted, C. F. CAMP.

Dr. William F. Hutchinson, of Providence, R. I., and Dr. O. B. Douglas, of New York City, delegates from the Rhode Island Medical Society and the New York State Medical Society, respectively, presented credentials and were introduced by the President and invited to participate in our deliberations.

An obituary of A. H. Chesmore, M. D., late of Huntington, was presented by Dr. C. J. Russell, of Hinesburgh.

Adjourned to 2 P. M.

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AFTERNOON SESSION.

Called to order at 2 o'clock P. M.

Mr. John Gibson, General Secretary of the Y. M. C. A. of Burlington, made brief remarks, in which he cordially welcomed the Society to Burlington and to the Y. M. C. A. Building.

Dr. C. S. Caverly reported for the Board of License Censors as follows:

Your censors, after the failure of the last Legislature to provide any better law governing medical practice in this State, determined as far as possible to secure the enforcement of the present statute. Accordingly the following circular, with which was enclosed a slip quoting sections 3908–3918 Revised Statutes, was mailed to every regular physician in the State.

"Dear Doctor:

"Many applications come to the censors of medical societies for information as to the requirements of our State laws relating to medical practice.

"The censors of the State Medical Society have accordingly had the enclosed extract from the statutes printed for general distribution among practitioners of medicine. The profession in all its phases, i. e., all "schools" and those of no "school" is invited to co-operate with the censors of this Society in an effort to secure compliance with the law throughout the State.

"We shall be glad to issue licenses to all giving satisfactory evidence of proper qualifications.

"Those qualifications are either:

"(1) The presentation of a diploma from a regularly recognized medical school; or (2) indisputable evidence that applicant has had such a diploma; or (3) passing a satisfactory examination before the board of censors.

"If you know of a physician who has no license and is entitled to one, please call his attention to the law. If you know of physicians who are practicing illegally please give us the facts. Our present law may not be the best, but such as it is let us secure its enforcement.

"Fraternally,

C. S. CAVERLY, M. D., Rutland,
C. F. BRANCH, M. D., Newport,
H. R. WILDER, M. D., Swanton,
} Censors of Vermont State Medical Society."

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Many responses were received to this letter. Some complaints of illegal practitioners were also received, but invariably the physicians making the complaints wished their identity concealed. Replies were sent to such letters, that the Society stood ready to prosecute if reliable witnesses and sufficient evidence were obtained.

Several instances might be cited where ignorant and unprincipled parties are practicing in the State legally, i. e., with licenses obtained and recorded, but this Society must be tired of listening to such tales. They only emphasize the fact which we all know so well, that our present law is very inefficient. Your censors have only one recommendation to make, and that is that we as a Society and as individuals labor with the legislature as a body and with its members as we know them, to secure a modern law on medical practice, and to this end it would seem wise to have a committee appointed at the present meeting to act in conjunction with similar committees from other Medical Societies in the State.

Licenses were issued to the following persons during the year, all except one presenting diplomas from Regular Schools or satisfactory evidence that they had such diplomas. Three persons without diplomas were examined by the Board, of which one was licensed.

Almon Cooper.	Orville C. Baker.	F. O. Kendall.
James E. Hartshorn.	Walter H. Vincent.	F. W. Comings.
F. P. Emerson,	John H. Carty.	R. O. Stoddard.
W. L. Havens.	Emma A. Runnion.	J. H. Gaines.
George P. Morris.	Arthur W. Underwood.	C. V. Bogue.
E. V. Trull.	L. H. Gillette.	F. S. Gray.
H. L. Newell.	H. A. Francisco.	A. C. McDonnell.
John B. Gilman.	Philip H. Fuller.	F. A. Newell.
Martin L. Bruce.	T. A. Coatey.	A. C. Phelps.
Frederick C. Liddle.	J. J. Siggins.	H. E. Dunton.
H. L. Manchester.	J. J. Manchester.	Dennis C. Powers.
V. Gosselin.	L. W. Flanders.	Charles R. Draper.
B. C. Senton.	J. A. De LaFleur	George B. Hyde.
J. H. Reilly.	J. Sutcliffe Hill.	A. G. Payment.
Alger W. Rice.	John M. Allen.	L. C. Dignault.
Horace L. Watson.	L. H. Nichols.	Chas. Arsene Prevost.
John B. Waters.	Henry R. Jones, Jr.	G. W. Belden.
Edson K. Smith.	George S. Cahill.	W. E. Lazelle.
A. A. Claflin,	S. Patenaude.	James D. Tanner.
William W. Genge.	L. D. Rood.	L. D. Cross.

C. S. CAVERLY, M. D.,
C. F. BRANCH, M. D.,
H. R. WILDER, M. D.,
} License Censors.

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An obituary of C. L. Allen, M. D., formerly of Rutland, was read by Dr. C. S. Caverly, of Rutland.

The President announced the following Nominating Committee: S. L. Wiswell, of Cabot; O. W. Sherwin, of Woodstock; J. C. Rutherford, of Burlington; W. D. Huntington, of Rochester, and Joel Allen, of Johnson.

Dr. J. H. Jackson, of Barre, presented an interesting paper entitled "Some European Lessons."

A paper on "Albuminuria, its detection and significance," was read by Dr. F. L. Ladue, of Alburgh Springs.

Dr. O. B. Douglas, of New York, presented an interesting paper on "The upper Air Passages and their Diseases."

Dr. William F. Hutchinson, of Providence, R. I., read a valuable paper entitled "What the general Practitioner can do with Electricity."

Dr. D. G. Kemp presented his report as Treasurer for the fiscal year ending October 1.

TREASURER'S REPORT.

Vermont Medical Society in account with D. G. Kemp, Treasurer.

CREDIT.

By cash in Treasury October 1, 1890	$362.07
Dues year ending October 1, 1891	283.00
Interest	14.48
	$659.55

DEBIT.

October 10, 1891. To paid J. S. Viles, expenses of banquet	$69.00	
To paid R. S. Styles, printing Transactions	102.00	
Miscellaneous printing and postage	66.95	
		$237.95
Balance in Treasury October 1, 1891		$421.60

Dr. L. M. Bingham presented a paper on "Recent Advances in Surgery," and the last paper of the afternoon session was by Dr. A. B. Bisbee of Montpelier, entitled, "Predisposition to Pulmonary Phthisis."

Adjourned to 7.30 P. M.

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EVENING SESSION.

The Society met at 7.30 o'clock, the following invited guests being present, Rev. F. E. Dewhurst, Mayor Seneca Haselton, W. L. Burnap, Elihu B. Taft, Robert Roberts, A. G. Whittemore and D. J. Foster, all of Burlington.

Dr. J. N. Jenne of St. Albans, delivered the President's annual address, subject, "The Expert Witness."

PRESIDENT'S ADDRESS.

DR. J. N. JENNE, St. Albans, Vt.

"THE EXPERT MEDICAL WITNESS."

GENTLEMEN:

In selecting my topic, The Expert Medical Witness, on which to address you to-day, I am aware that I have deviated somewhat from the well trodden path which has been followed by the Presiding Officer of this Society. In conforming to the rule which provides that an address shall be delivered by the President at each Annual Meeting on some Medical subject, the subject submitted is not strictly medical in all its bearings, but is of gravest interest to the profession, nevertheless. From early times the need was felt for the expert witness, and mention is frequently made of it in Roman Law. Best, in a work on evidence, says: "It would not be easy to over estimate the value of expert evidence in many difficult and delicate enquiries, not only by Medical men and physiologists, but by learned men and experienced persons in the various branches of science, art and trade." On the other hand, courts have frequently stated their disbelief in the value of such evidence. I am moved, largely, in the choice of subjects to present for your consideration and discussion by these facts, namely: that the value of the opinion given to the court relating not to facts, or facts proven, or statements assumed to be true, but upon matters of opinion, based upon these facts, by a skilled physician, is questioned.

Justice Davis, of the Supreme Court of Maine, says: "If there is any kind of testimony that is not only of no value, but even more than that, it is, in my opinion, that of medical experts. They may be able to state the diagnosis of the disease more learnedly; but upon the question, had it at a given period reached such a stage that the subject of it was incapable of making a contract, or was he irresponsible for his acts, the opinion of his neighbors, if of good common sense, would be worth more than that of all the experts in the country."

Justice Chapin, of Massachusetts, in 1866, says: "I think the

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opinion of Medical Experts are not as highly regarded as formerly, for while they often afford great aid in determining facts, it often happens that experts can be found to testify to any theory, however absurd."

Justice Greer of the United States Supreme Court, declares: "That opposite opinions of persons professing to be experts, may be obtained in any amount, and that it often occurs that not only many days, but many weeks are consumed in cross-questioning such witnesses, to determine their skill and knowledge, and the correctness of their views, wasting the time and worrying the patience of both the Court and Jury, and perplexing instead of elucidating the question involved in the issue."

Now these are very serious charges, and coming from such authority, it behooves the physician, especially those who are frequently called to testify as experts, to make diligent search and learn if possible its cause and remedy, if there are any such.

It is the opinion of the writer—an opinion shared by a large number of our own profession, and by a not inconsiderable number of the legal profession—that the trouble largely lies in our present system of laws or rules of the Court, relating to expert medical testimony; a system for which the legal profession are distinctly responsible. No sane man at the present time will contend that the opinion of a skilled physician would be of no value in the determination of the causes, nature, result, and a prediction or prognosis in a given case worse than useless to the family or friends of an injured man, no matter how complicated the symptoms or how obscure the disease. Yet there are many eminent and honorable members of both Bench and Bar who would contend that the same opinion expressed in Court, upon the same case, would perplex rather than elucidate the question involved in the issue.

A gentleman of eminent legal mind, to whose attention I called this fact, said: "The trouble is, Doctor, the cases which come into Court are usually very complicated, and obscure in nature, and you medical men have no rule, exact and unvarying, which will apply to all these cases without exception, a rule which shall settle beyond peradventure the allegations of the plaintiff in these cases for civil damages following injury," to which I answer, true, but, because every question with relations to an obscure case of disease, for instance, of the nervous system, as to its probable cause, symptoms, nature, duration, and a prediction as to its probable termination, cannot be answered in a positive, dogmatic manner by a man who has especially studied this disease in all its ever changing phases, does it follow that the same man, untrained and unprepared, or another, can do better, applying general rules and common sense?

The fact is, there are, as every intelligent physician knows, very few *signs* of disease; there are many *symptoms*, each, unfortunately, common to many diseases.

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Another cause, which has contributed to bring about the unenviable reputation of the physician in court, and it too is chargeable to the same system, is the fact that often men are summonsed to appear as expert witnesses, who have no just claim to such distinction in the particular class of cases involved in the question at issue. They are required to answer in the most dogmatic manner the famous *hypothetical* question, based on the facts of the case on trial, constructed, often by astute lawyers, with the sole view of aiding the legal aspects of the case on one side or the other. A question always unscientific: a question which I think the physician would do well to refuse to answer.

How long, I ask, would the practice be tolerated in private practice, of giving an opinion in a complicated case of disease of the brain or spinal cord, wholly on the presentation of the answer to questions propounded by a lawyer?

The class of diseases and injuries which are most apt to appear in Court, and in which the greatest conflict of opinions among medical men appear, and which have come to be of so alarming frequency, particularly in this country, is concussion of the spine in railroad accidents or "traumatic neuroses;" a disease manifested by a multitude of symptoms, very insidious in their development, proceeding often from apparently trivial injuries, of which there were no gross symptoms of violence done the body; symptoms almost wholly subjective in character, never constant in their onset, duration or behavior; symptoms which the medical experts or attendant, as the case may be, must take from the sufferer's mouth.

Who can measure the value of the statements of such a patient? The desire for sympathy; the fondness which seems planted in the mind of every human being when ill, to be regarded so sick or so much injured, as to be an object of marvel, as though it were an accomplishment; the coddling of friends, the promptings of a friendly doctor, the pointers from an interested attorney, as influences seem trivial to one who has little opportunity for observing such cases, but they are potent influences, nevertheless. Recent writers have been so much impressed by this thought, that the name of *hysteroid* has been suggested. Sajous, in the Annual for 1889, says: "The importance of the recognition of this mental state for diagnostic and prognostic purposes, cannot be over estimated, and I believe that much of the incurability in railroad cases is due to the fact that the psychical treatment is not and cannot be attempted at an early period; once fully developed, like hypochondriasis, its removal is very doubtful."

I have dwelt somewhat at length upon the details of the case for the purposes of the paper. Now, experts are summoned who have not, in all probability, examined the plaintiff minutely, if at all. They are not to testify as to matters of fact, but to matters purely of opinion.

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The question presented him naturally divides itself into two separate considerations: First, as to the value of any symptom or symptom group, as indicative of the fact of the receipt of an injury. Second, admitting the injury, will the plaintiff recover wholly; if not, to what degree and when?

The first consideration is usually easily disposed of—there is little difficulty ordinarily in establishing the relation between a given effect and an alleged cause; but it is in relation to the second consideration that discrepancy in medical opinion is developed. It involves not an agreement as to facts seen or that are demonstrable, but relates purely to the legitimate deductions or conclusions to be drawn from certain facts assumed to be true. It is a projection from given premises into that débatable land of prophecy.

Such discrepancy of opinion in these complicated cases is to be expected, and is perfectly legitimate and for the conflict of views to which it leads in medical evidence, when these views have relation to matters of opinion only and not to matters of fact, much and very undeserved blame has been cast on the medical witness.

If public discrepancies of opinion were confined to the medical profession, the case indeed would be lamentable, and one that might justly be held as indicative of something wrong in the morale or judgment of its members. But how is it with the other professions? Are the great engineers found always ranged on one side of a question, which is one of practice or opinion, one which does not admit of the application of rigid laws of exact science? How, in politics; are all of the great statesmen of one mind? Is Law free from internal conflicts; are there no superior courts; are there no appeals from the decision of one court to that of another; are decisions never reversed? Do we never hear in the halls of Congress, conflicting opinions amongst the magnates of the legal profession, on the constitutionality of a law or act?

If strict analogy can serve to afford an illustration or to point an argument, I would submit the following, taken from the Vermont State Reports, to those members of the legal profession who too often refer to the differences of opinion of medical experts as brought out in these railroad compensation cases, only to point the conclusion that judgments, so divided in their course, and so little consistent, can only have slight weight attached to them, and deserve little consideration. From 1829 to 1844, 1090 cases were handed up to the Supreme Court of the State of Vermont, in which exceptions had been taken to, or appeals from, the rulings of the Judge in the Court below; of this number, 778 were affirmed and the remaining 312, a little less than one third, reversed. From 1880 to 1891, 1058 cases were carried up, of which number, 645 were affirmed and 413 reversed, that is a trifle over 39 per cent. of the whole number reversed.

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I allude to these cases only to show what is already known, that there are differences, even conflict of opinion among those who contend for exact rules, and positive opinions. I admit that they should be expected in the legal as well as in all other liberal professions; that it is in many instances perfectly legitimate and inevitable. Far from me be it to speak disparagingly of it or them; I call your attention and invite their attention to the fact of the existence of this difference of opinion, as it relates to the medical witness in Court, and have endeavored to show that they flow from natural and unavoidable causes, common to all professions, the arts and the trades; and further that the very object which is sought is often defeated by the methods which are employed to arrive at the truth, trusting this feeble effort might excite a discussion and investigation, participated in by both, which would result in a better understanding of what is required on the one hand, for the application of the rules of law and evidence, and what can and cannot, on the other hand, be furnished, because dealing with laws and principles, not made by human hand, therefore "altogether past finding out." And finally, to the suggestion of some other system or method to pursue in the determination of the truth, that justice may be met in these most perplexing cases.

I suggest in such cases as I have referred to, that if the medical men, representing the interests of the party to the litigation, were to meet in consultation, and, if necessary, that the patient be removed from the surrounding bad moral influences, to a hospital, where more abundant and continued opportunities are afforded for the critical observation of all the phenomena connected with the case, I venture to predict that the truth, so far as ascertainable, would more often be found and justice reached, than under the present system.

True it is now, that surgeons for the defendant in such cases have an opportunity of seeing and examining the plaintiff in the presence of his medical man, but no consultation is had, and no attempt is made to learn each other's opinions, or to reconcile discordant views. If it were had, and they each had equal opportunity for the observation of the patient, a conjoint report might be made, embodying the facts seen and opinions or inferences drawn, as to the nature, probable cause, and future of the case. This report to be handed to the Court for his guidance with the jury, in that part only of the case which relates to the purely scientific questions involved.

In case of the failure of the medical witnesses to arrive at a conclusion, which could be endorsed by all, or in case of an appeal from their decision, the Court might appoint two or three surgeons, of known skill in the department of medicine, to which the case under trial properly belongs, who should examine the evidence submitted in the report of the medical witnesses, as to facts learned, and grounds for the opinion

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expressed, and whose opinion would be final, so far as relates to the purely surgical or medical part of the case. Their report would embody such information as the Court admittedly knows little or nothing about, and presumably what he most desires; the decision of the board would by reason of this fact, be an independent one; they could not be accused of unworthy motives; they could not be calumniated, and their evidence would not be stirred by groundless charges of partizanship.

I believe this plan would result in the greatest advantage to both the legal and medical professions; it would not interfere with the present plan of Court proceedure; the jury would decide in all cases as to matter of fact as now, except with reference to purely scientific questions, which would be, to all intents and purposes, referred to a jury of medical men.

I would not be understood that I believe the suggested plan would invariably and assuredly in every instance, do away with discordant views as among expert witnesses, but that the ends of justice would be sooner and more certainly attained than under the present system.

I may then in conclusion, sum up by saying: First, that the present system of laws and rules of Court, relating to expert medical testimony, is largely responsible for the apparent and actual discrepancy of opinion among medical witnesses.

Second: That the Court and jury are incompetent to decide questions scientific in character, relating wholly to medicine, and that such questions should be referred to a board of physicians appointed by the Court for their determination, and whose decision should be final.

Third: That the testimony or report of medical witnesses, should, if contradictory, be referred to this board, who should report in writing to the Court the nature, probable or possible causes, extent and probable ultimate result of the plaintiff's injuries.

Gentlemen of the Vermont State Medical Society, in closing, permit me to acknowledge my profound appreciation of the proud distinction which has been accorded me in being selected as your presiding officer for the year. It is an honor that rarely comes except for long and honorable service; none appreciate the honor and my unworthiness more than myself.

In conforming to one of the requirements of the office, I present you my feeble effort, believing it will be received as former efforts have been, with charitable consideration, only hoping it may excite a healthful discussion which will ultimately lead to a revision of present laws and rules regulating the admission and use of expert medical testimony; if, in your opinion, it is for the best interest of all concerned.

The subject was discussed by Mr. Burnap and Mr. Taft, also by Drs. Hamilton, Wilder, Stimson and Grinnell.

Adjourned to Friday, at 9.00 A. M.

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After the close of the evening session the Society met at the Van Ness House at 10 P. M., for the annual banquet, which was served in the large dining room, there being present the above named guests, the delegates from New York and Rhode Island, and members to the number of eighty or ninety.

Prof. J. H. Jackson of Barre, anniversary chairman, presided. After partaking of a bountiful repast, short speeches and stories were in order, the pipe of peace was lighted, and all enjoyed a social hour which ended at midnight.

SECOND DAY,—FRIDAY, OCTOBER 16.

Met at 9.30 o'clock.

The following resolution, introduced one year ago, was passed by a two-thirds vote:

Resolved, That the annual meeting be held at such place as the Society may elect, at the previous annual meeting.

Montpelier was selected as the place of meeting for 1892.

The following officers were elected for the ensuing year:

OFFICERS.

President,	CHARLES S. CAVERLY,	Rutland.
Vice President,	A. C. BAILEY,	West Randolph.
Secretary,	D. C. HAWLEY,	Burlington.
Treasurer,	D. J. KEMP,	Montpelier.

EXECUTIVE COMMITTEE.

C. S. Caverly.	D. C. Hawley.	E. R. Campbell.

LICENSE CENSORS.

C. F. Branch.	H. R. Wilder.	W. F. Hazeltine.

PUBLICATION COMMITTEE.

J. M. Clarke.	J. B. Wheeler.	J. C. Rutherford.

COUNCILLORS.—One from each County.

E. M. SHIPMAN,....Addison.	JOEL ALLEN,..... ...Lamoille.
F. W. GOODELL, ...Bennington.	E. P. STIMSON,.. ....Orange.
J. M. ALLEN,.....Caledonia.	F. W. COMINGS,.....Orleans.
C. J. RUSSELL, ... Chittenden.	C. W. STROBELL,.....Rutland.
H. A. CUTTING, .. Essex.	GEO. B. NICHOLS,.....Washington
F. D. ROBERTSON,..Franklin.	E. F. WESTON,.....Windham.
C. W. PETTY,.....Grand Isle.	J. D. BREWSTER,.....Windsor.

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DELEGATES.

U. V. M.—J. N. Jenne and W. H. Vincent.
Dartmouth.—D. C. Hawley and O. W. Sherwin.
New Hampshire State Med. Soc.—H. H. Lee and Dean Richmond.
Maine State Medical Society.—W. D. Warren and F. R. Stoddard.
Massachusetts State Medical Society—H. D. Holton and J. H. Jackson.
Rhode Island State Med. Soc.—J. C. Rutherford and W. D. Huntington.
Connecticut State Medical Society.—E. R. Campbell and A. L. Bingham.
Colorado State Medical Society.—S. L. Wiswell.
New York Medical Association.—L. M. Greene and P. E. McSweeney.
New York Medical Society.—A. P. Grinnell and J. H. Linsley.
Northern N. Y. Medical Society.—S. S. Clark and A. B. Bisbee.
White River Medical Association.—C. E. Chandler and L. F. Burdick.
Conn. River Valley Association,—E. J. Fish and D. L. Burnett.

American Medical Association.

D. G. Kemp.	Henry Janes.	G. B. Bullard.
O. W. Peck.	C. W. Peck.	E. F. Upham.
E. P. Fairman.	J. H. Hamilton.	W. R. Hutchinson.
C. W. Petty.	J. S. Richmond.	O. W. Sherwin.
J. N. Jenne.	C. S. Caverly.	R. B. Skinner.
C. C. Smith.	H. H. Swift.	J. B. Wheeler.
C. F. Branch.		

Dr. O. W. Sherwin was elected anniversary chairman for the next meeting.

A paper on the "Present Status of the Tuberculin Treatment" was presented by Dr. Jo H. Linsley.

Dr. J. H. Hamilton read a paper entitled, "Pure Drinking Water and How to Secure it."

"Indigestion and its Relations to Disease," was the subject of a paper by Dr. C. W. Peck of Brandon.

Dr. J. H. Woodward of Burlington, made extended remarks on "The Nature, Varieties, Causes, Symptoms and Treatment of Glaucoma."

Adjourned to 2.00 P. M.

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AFTERNOON SESSION.

Met at 2.30 o'clock.

The following papers were presented:

"A Study of New Remedies," by W. H. Vincent, Orwell.

"Heart Sounds and Cardiac Murmurs," by D. C. Hawley, Burlington.

"Patent Nostrums," by L. W. Flanders, Burlington.

Dr. O. W. Sherwin of Woodstock, presented a paper entitled, "Shall we Abolish the Lecture System in our Medical Schools"? and Dr. C. S. Caverly one entitled, "Preventive Medicine with a Study of some Infectious Diseases Prevalent in Vermont." The two last named papers were for lack of time, read by title only.

The last paper of the session was by Dr. H. R. Wilder of Swanton, on "Puerperal Septicæmia."

On motion of Dr. D. C. Hawley the chair was instructed to appoint a committee of three, to confer with members, or a committee of the Eclectic and Homœopathic State Medical Societies with reference to a new law for the licensing of physicians.

Drs. J. H. Hamilton, J. N. Jenne and J. C. Rutherford were appointed such committee.

Dr. Wm. F. Hutchinson of Providence, R. I., and Dr. O. B. Douglas of New York City, were elected honorary members of the Society.

During the meeting the following physicians were elected to membership:

F. W. COMINGS, North Troy,.....U. V. M., '86
J. M. ALLEN, St. Johnsbury, ... Bellevue, 90, " '90
GEORGE S. CAHILL, Burlington,..... .....Dartmouth, '90
E. S. WESTON, Newfane,..... .....U. V. M., '71
J. D. TANNER, Winooski,..... .. " '91
J. E. McSWEENEY, Barre,..... ...l.. ..... " '91
M. F. PRIME, Barton,.....Univ. N. Y., '79
G. B. HYDE, No. Hero,.. ....Atlanta Med. Col., '90
O. C. BAKER, Brandon,.....Univ. N. Y., '79
W. W. STYLES, Essex Centre,.... .....U. V. M., '82
E. B. MACK, Olcutt, ... "
CHARLES R. DRAPER, Enosburgh Falls,..... " '88

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The Executive Committee reported papers for the next meeting by the following members :

F. R. Stoddard.
E. P. Stimson.
A. E. Moody.
Edw. R. Campbell.
C. W. Strobell.
H. D. Holton.
J. H. Richmond.
A. J. Willard.
C. R. Draper.
Joel Allen.
George B. Nichols.
A. L. Bingham.
W. F. Hazelton.
D. G. Kemp.
J. M. Clarke.
S. T. Brooks.
B. J. Andrews.

A vote of thanks was unanimously extended to the Y. M. C. A. of Burlington and the various Railroads for courtesies extended.

ATTENDANCE.

DOCTORS.	DOCTORS.
Wm. F. Hazelton, Springfield.	O. W. Sherwin, Woodstock.
F. R. Stoddard, Shelburne.	F. L. Kidder, Woodstock.
J. M. Clarke, Burlington.	J. F. E. Allard, Winooski.
J. C. Rutherford, "	J. D. Tanner, "
A. P. Grinnell, "	O. W. Peck, "
P. E. McSweeney "	George B. Nichols, Barre.
B. J. Andrews, "	J. H. Jackson, "
George S. Cahill, "	J. E. McSweeney, "
W. R. Prime, "	C. J. Russell, Hinesburgh.
J. B. Wheeler, "	F. W. Comings, No. Troy.
H. A. Crandall, "	G. B. Bullard, St. Johnsbury.
L. W. Flanders, "	C. M. Ferrin, Essex Junction.
L. M. Bingham, "	W. D. Huntington, Rochester.
George C. Briggs, "	A. E. Moody, Isle LaMotte.
D. C. Hawley, "	E. S. Weston, Newfane.
J. H. Woodward, "	Henry Janes, Waterbury.
J. H. Linsley, "	E. P. Stinson, W. Randolph.
H. C. Tinkham, "	F. L. Ladue, Alburgh Springs.
A. J. Willard, "	W. H. Vincent, Orwell.
A. B. Bisbee, Montpelier.	O. G. Stickney, Georgia.
D. G. Kemp, "	A. C. Bailey, West Randolph.
O. C. Baker, Brandon.	E. S. Albee, Bellows Falls.
C. W. Peck, "	E. H. Pettingill, Saxton's River.
C. R. Draper, Enosburgh Falls.	J. H. Hamilton, Richford.
A. J. Darrah, Enosburgh Falls.	H. R. Wilder, Swanton.
Joel Allen, Johnson.	E. F. Upham, West Randolph.
E. J. Fish, So. Royalton.	J. N. Jenne, St. Albans.

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[Attendance—Continued.]

DOCTORS.	DOCTORS.
B. W. Davis, Montgomery.	F. D. Robertson, St. Albans.
C. W. Strobell, Rutland.	C. F. Hawley, Fairfax.
S. H. Griswold, Rutland.	A. L. Bingham, Williston.
C. S. Caverly, Rutland.	W. H. H. Varney, East Charlotte,
H. H. Swift, Pittsford.	F. W. Sears, Grand Isle.
W. R. Hutchinson, Enosburgh Falls.	I. M. Bishop, Jericho.
J. D. Brewster, Windsor.	E. W. Shipman, Vergennes,
E. B. Mack, Olcutt.	E. G. Hooker, Waterbury.
W. W. Styles, Essex.	L. C. Dodge, Rouses Point, N. Y.
Edw. R. Campbell, Bellows Falls.	
O. B. Douglas, Delegate, New York, N. Y.	
Wm. F. Hutchinson, Delegate, Providence, R. I.	

Total attendance, 75.

On motion adjourned.

D. C. HAWLEY, M. D., Secretary.

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WHAT A GENERAL PRACTITIONER CAN DO WITH ELECTRICITY.

By WILLIAM F. HUTCHINSON, M. D., Providence, R. I.

Vice President American Electro-Therapeutic Association.

Before entering upon the subject proper of my paper, it will be best, perhaps, to explain in a few words the present technical terms that will be used, and to say a few words in explanation of some special studies of Electro-diagnosis that I am engaged in prosecuting.

As doctors who wish to know something of the various forms of energy that we employ in our daily fight with disease, there is only needed to know in Electro-physics, the meaning and use of the three words, volt, ohm and ampere. A volt is the established unit of electro-motive force, measured at the source of supply—the battery or dynamo. The ohm, the unit of resistance offered to the passage of the current by any means, and the ampere the unit of electrical energy remaining after resistance is overcome. I am aware that these definitions would require additions before fit for use by an expert or to apply to scientific formula; but they are correct and all that is needed by a general practitioner of medicine.

To illustrate these three units, I am accustomed to compare the volt to the pressure of the head of water in a mill sluice, at the inlet; the ohm, to the frictional and other resistance encountered by the stream in its course, including the motion imparted to machinery, and the ampere, to the quantity of energy active or potential, remaining in the stream flow after its mill work has been done. Or, if a series of twenty cells will give twenty volts of energy at the battery, which will meet with a resistance of 100 ohms in its use, there will remain, as indicated by the milliamperemeter, twenty milliamperes of current. In this way the output, the amount of work done, can be measured with sufficient accuracy.

It has always seemed to me that the chief obstacle to the general scientific use of electricity in treatment of disease lies in the conviction of our busy colleagues that it takes too much time to learn Electro-physics, and in the fact that there is no such thing as a standard for machines; something to refer to, to guide them in their choice of instruments. And this last is a serious matter, since few of our doctors, especially those in country practice, can afford to buy expensive batteries upon hearsay alone.

I am glad to say that this subject is already before the American

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Electro-Therapeutical Association, and that we mean to standardize batteries as soon as possible.

In the matter of the study of electrical resistances as diagnostic aids, I have only to say that I have for some time been engaged in compiling tables of differing resistances in different physical conditions, which may at some time be of avail.

The theory is that every substance has a normal resistance to an electrical current, which is readily measured, and that any deviation therefrom marks a condition of change that is significant. In living human tissues, it is assumed that a standard resistance, whatever that may be for different parts of a healthy body, will be lessened by the presence of disease even in its first stage before any other sign is possible, and that this decrease will be the same for all cases of similar disease. In other words, that by means of a twenty volt battery, a meter that will register both volts and amperes and a system of tables of disease resistances, the physician may be able to diagnose any disease accurately days before its ordinary course of development would show its character.

You will see what a wonderful thing this will be, if it can be generally used; for it will exchange our present educated system of guess work for something like certainty. But all this lies in the future, and I only present the theory to show you that your colleagues who have charge of this especial branch of medical art, are hard at work along the general line of progress in medical practice.

During the long time that I have devoted to the special practice of electro-therapeutics, a great number of letters have come to me asking for information respecting the proper use of electricity in a variety of cases, and replies have been acknowledged in a manner that showed interest and careful attention. In the various scientific societies before which I have spoken on this subject, there has been a respect accorded and an amount of keen interest shown that has convinced me that the thinking part of our people believe that the time has come for the employment of electric energy in treatment of disease to as full an extent as the most radical specialist could desire. And I believe that the majority of the profession agree in using it as far as they can safely, and will welcome all information from respectable sources that may aid them to do so.

Our medical men are among the shrewdest of Americans. They know that the age demands increased capacity for production, and better goods from them, as from all others; and, since their merchandise is health, public and private—most preciously desired of all products, it looks to them with vigilance to neglect no means to provide it as perfectly as possible.

They are aware, these Yankee doctors, that among means to this end the employment of electric energy has stepped to the front, and

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that, more and more each year, its use at their hands is demanded by the people.

They are so completely convinced of this that I believe it to be nearly impossible to find a physician's office unprovided with some form of electrical machine.

A gentleman nearly connected with Mr. Edison's great manufactory lately said to me, while showing his new family faradic machine, and explaining its availability for medical men, "I doubt if you have any idea how many of these instruments are sold. The number that we turn out annually runs into the thousands, and we are just beginning to cater to the profession."

They are found, not only in physicians' offices, but thousands are purchased every year by confiding heads of families, who are led to believe that electricity is of the nature of a non-intoxicating cocktail, to be taken at any and all times, irrespective of actual need.

But among the profession at large, knowledge of electro-therapeutics is increasing, and much more intelligent study is now given to this branch of science than ever before; and yet, in the nature of things, it is improbable that general practitioners will ever care to advance in our special study much farther than its alphabet. Their time is too much occupied to devote to a single branch that demands so much of it, and spare cash is rarely sufficient to invest a great deal in complicated and expensive instruments that need constant care. They are learning that after they have purchased and installed a fine set of electrical machinery, something is still lacking, and that is, the manual expertness coming from constant use and judgment in choice of current that is born of long experience in electro-physics. In many cases they are conscientious enough to ask information in a doubtful case; but in many more they throw the electrodes down with an impatient "Pshaw; I told you that electricity was no good!"

I heartily agree with my friend, the editor of the *Journal of Balneology*, and venture to quote a few lines from his August number, only changing a single word. "If, however, we would place the study of electro-therapeutics on a sound scientific basis, we must go to the root of the matter and teach our students in our medical schools the principles underlying this method of treatment. The establishment of a chair of electro-therapeutics in our leading universities, or a special course of lectures on this subject, will go far to convince medical men of its importance, and act as an incentive to its investigation."

And so I proceed to my suggestions. First, as to choice of instruments. Much handling of many kinds has taught me to avoid sedulously all prettily finished boxes whose contents are hermetically sealed, which must be returned to the manufacturer when repairs or re-charging is needed. My advice is not to buy any form of galvanic cell unless

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every part is easily inspected, readily understood and quickly reparable without expert aid. All good makers now supply hydrostats that will keep fluid in, and so-called dry cells are only dry because they are fluid tight.

Up to the present, I believe that some form of Grenet cell is the best for portable use that a general practitioner can purchase. It is reliable when cared for, quickly repaired when out of gear, and any of its parts may be replaced by any one in a few minutes at a trifling expense. A few days ago I went a hundred miles into the country to consult with a bright modern doctor. When I called for a galvanic battery to help the diagnosis, he brought me a handsome box containing fifty closed cells that he had bought a month before. Much to his disgust, when the circuit was closed, there was no current, nor could our united endeavors get any. If that battery had been a series of open Grenet cells, how easily we should have found the defect and remedied it!

Twenty such cells will be found sufficient for all ordinary uses. They will give, say 24 volts. E. M. F., and with 100 ohms resistance, about 80 m. a., current enough for usual work, including such minor surgery as nœvi, urethral strictures, removal of superfluous hairs, etc., where there is practically no resistance.

For office purposes, where maximum of life and minimum of trouble are requisites, I have not found anything equal to the new Edison cell, marked type "C" in his catalogue. It is neat, as cheap as any other, has a life of fifty ampere hours, which means a year's work for a general practitioner, may be repaired by any one, and has that most valuable of all qualities, it will stay. In other words, it will give the same voltage, about seven-tenths volts per cell, as long as any part of the elements remains. It does not commence work with one volt per cell and slide steadily down to nothing, as every variety of Leclanche cells does; one may always depend upon it.

Twenty-five of these, at a cost of $32.50, less discount, will prove sufficient for all general work.

For a faradic machine, I should advise a good DuBois Reymond coil, with two Grenet cells in the box. One of them will be enough for ordinary work, but in asphyxia from inhalation of gas, in drowning cases, and especially in opium narcosis a second cell is necessary, as the treatment may be protracted for hours. In one of my recent cases, I exhausted four Fleming cells before the patient was out of danger.

I am not in favor of fancy attachments on the little table. Slow vibrating hammers, rows of shining buttons, many switch levers, etc., tend to confuse the busy doctor, and unsettle his confidence in his machine, at a time, perhaps, when instant action is imperative. A single pair of posts for electrode cords and cut off switch are all, in my opinion, that are needed.

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I regard the faradic coils made by Fleming, of Philadelphia, as the best in the country. They are the perfection of instruments, and the only criticism that I ever heard on them was from my friend Newman: "Splendid," he said, "but expensive."

Well, the best one that he makes costs about $25.00 and will last a lifetime, surely not very dear.

All instruments must be cared for. With galvanic batteries, it is not asking too much, in the interests of good work, that pairs be removed from acid fluid, rinsed in warm water, and dried before being shut up in their box, perhaps for months. With faradic machines, it is sufficient to empty and wash out the cell once in six months.

I have nothing to say here of static machines, accumulators, nor galvano-caustic batteries, since these are all instruments requiring such skill and technical knowledge to use effectively, cost so much money and demand so much care that their use is likely to be confined to specialists and well equiped hospitals.

Instruments provided, let us see what our doctor can do with them, without other instruction than he can find in books, or more time than his busy days and far from idle nights give him, always bearing in mind how much easier and simpler it is to write a prescription than to make an effective electrical application.

He may treat all functional derangements of special sense, and such forms of their paralysis as depend upon eccentric causes. Facial paralysis, aphonia from cold or sudden fright, tobacco amaurosis, tonic spasm of ocular muscles, hysterical deafness, and the like. These are all usually amenable to faradism, and neither require special skill in application, nor, as a rule, protracted treatment; and he may often obtain results from a single sitting that will astonish and delight him. Any text-book will give the proper technique, and his portable machine will furnish all necessary power.

He may treat certain forms of dyspepsia, dependent upon atony of stomach nerves, and will find in daily Faradic applications of slight strength so efficient an aid to diet and ferments that he is not likely to miss using it a second time. I have found the best way in these cases to direct the current from the cerebro-spinal axis to the epigastrum, using large flat sponge electrodes in a recumbent position for five or six minutes daily.

He may cure sexual neurasthenia, meaning thereby that hysterical condition of the genito-urinary tract, which suspends sexual power in the presence of women, and ends in the patient's conviction that he is impotent. Here I have found it best to alternate faradism and galvanism; the former to stimulate sacral nerves, and the latter to restore tone to erectile muscles. It is best to employ faradic currents of sufficient strength to cause moderate pain, since lighter ones occasionally stimulate the penis

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to orgasm. Perhaps the best way of making these applications is by means of my penis electrode, a tube of nickeled copper, fitted with a plunger and weak spiral spring, which hold a pad of wet absorbent cotton in contact with the glans, and divide the current over the whole organ. The patient is frequently convinced that his case is hopeless, and such conviction is fatal to success. Unremitting, tender care is called for, and with the first firm erection the work is half done.

He may treat peripheral neuralgias from eccentric causes, or such as are confined to nerve trunks. For these I think that he had better employ galvanism, using a low pressure, say eight or ten m. a. in an outward direction, from center to surface.

I believe that it is rare to find that faradism does any good in these cases; indeed, it often aggravates a bearable pain until it becomes intense. It is the sedative, not the stimulant effect of electricity that we need here. Perhaps Radcliffe's plan of application is the best. He says, in his "Dynamics of Nerve and Muscle," "In a case, for example, of cervico-brachial neuralgia, we place the positive pole as near as may be to the origin of an affected nerve; the negative pole is held in the hand of the same side, which is immersed in a basin of warm, salt water. In this basin is another electrode, the wire from which is put in communication with the earth (grounded) most conveniently by putting it in contact with a gas-pipe. Patient and battery must be properly insulated. The result of this arrangement is that free negative electricity is carried off by the earth wire, and the limb remains charged with free positive electricity." I have usually employed this method.

In the neuroses accompanying or perhaps constituting herpes zoster, I have seen the entire trouble disappear in thirty-six hours under galvanic treatment alone. In this disease, I use Walling's foil bandage, which our doctor may easily make by folding tin-foil over a cotton roller in its length, and bandaging the chest therewith in the usual way. Connect the negative pole of a galvanic battery with one end of the bandage, with the positive attached to a broad plate at an indifferent point, and run the pressure up, a little at a time, until a sharp sensation of burning is felt. According to my experience, this will be in the neighborhood of 20 m. a., and should be continued for thirty or forty minutes.

He may cure muscular rheumatism in what appears to the patient to be a marvelous way. I learned from my old tutor, Duchenne de Boulogne, that the skin only must be faradized to cure these pains. This may be thoroughly done by drying and powdering the surface and using a labile current with a warmed, polished metal globe. If any subcutaneous muscle contracts, the treatment is lost and must be repeated after an interval. The current is confined to the skin by using swift, light passes in long sweeps. In this way a current may be made painless that is sharp enough to pierce the skin with crackling snaps and a shower of fine sparks.

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He may relieve the neuralgic pains of dysmenorrhœa. In a certain per cent. of cases, these are dependent upon a stenosed canal, when a No. 20 olive tipped bougie, carrying 10 m. a. of negative galvanism, will speedily dilate the stricture and relieve the patient. When the cause is congestion, the same current applied to cervix and upper vagina by a dilating electrode, will effectively attain the same end. So complete is this relief that I have seen more than one woman fall asleep in the operating room during the application.

He may use electricity in cases of suspended animation of newly-born infants. It is far better than artificial respiration effected by the doctor's mouth, and much more agreeable. I think that the best way to apply faradism here is through the medium of a warm bath. One pole may be plunged into the water and the other touched to the skin above the surface.

In this desultory way, gentlemen, I have endeavored to suggest a few of the many things that a general practitioner may do with electricity, and do well with nothing more than his two instruments and half a dozen electrodes. The list is but a small one, but to extend it in this presence is needless. I have said nothing of electro-surgery nor of electricity in gynecology, not only because there are others present more competent than I to speak upon those subjects, but because I believe that success in both is dependent upon a degree of expertness in manipulation, and an amount of knowledge of electro-physics that no general practitioner will be willing to give sufficient time to attain.

What he may not do, his own sense and a fair amount of experience will teach him, and what knowledge remains after his experimenting is done, will be likely to imbue him with respect for the science of electro-therapeutics, and for the men who devote themselves to its advancement in the face of factious and determined opposition.

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SUDDEN DEATH FROM PULMONARY THROMBOSIS AND EMBOLISM DURING PREGNANCY.

By O. W. Phelps, M. D., Bellows Falls, Vt.
Now West Warren, Mass.

REPORT OF A CASE.

Cases of extreme rarity, though interesting, are not usually the most profitable as subjects for a paper; but those of comparatively rare occurrence, though well understood by the profession, are liable to be forgotten or slip the mind of the active practitioner, and hence he is liable to make a mistake in diagnosis to his own mortification, and perhaps the injury of his patient when treatment is based upon such diagnosis. But in cases of sudden death, like the one I am about to report, it is only the physician's reputation that suffers, as his patient has gone beyond his power to torment e'er he reaches the bedside, and his only office is to assure the sorrowing friends that there was no help for their loved one; but, one explanation of the cause or the mode of this sudden and rude severing of all earthly ties is asked and expected.

Usually the common and popular snap diagnosis of heart disease or apoplexy satisfies all demands, but occasionally some enquiring mind insists on a more definite explanation of their bereavement, or they realize that the symptoms do not agree with their preconceived ideas of these diseases; then it is, we are put to our wit's end for an answer, and again we may be called before life is extinct, and when we shall need all the presence of mind we are possessed of, and the accumulated knowledge of the profession will be none too much if we are to be of service to our patient.

Among the internal causes of sudden death which will come to our mind are:

First. The bursting of aneurisms.
Second. Rupture of the heart.
Third. Valvular disease of the heart.
Fourth. Spasm of the heart.
Fifth. Heart clot.
Sixth. (*a*) Extravasation and effusion of blood at the base of the brain, from disease and rupture of the arteries. (*b*) Large hemorrhages into the substance of the brain, from the same causes. (*c*) Embolism, constituting apoplexy.
Seventh. A somewhat similar factor to the last, but affecting an entirely different organ. Thrombosis and embolism of the pulmonary

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artery, first explained by Virchow, and exemplified by the case I am about to report:

CASE. April 17th, 1891, Mrs. A———, age 35; married about ten years; has three children, ages respectively 8, 4, and 1½ years; she has lost one child between the last two; at present time is about 8½ or 9 months pregnant (against her wishes). At about the seventh month rather suddenly she was seized with pain in the left leg, followed by swelling below the knee; this became very painful so it was with difficulty she could get about the house, and lasted between two and three weeks, when it disappeared about as suddenly as it came, without treatment other than rubbing with liniment and the use of an elastic abdominal supporter, as suggested by myself, as I was in the house soon after this pain began, to see the husband. It was casually spoken of but no consultation asked or expected. I did not see her again alive. The swelling did not wholly disappear, and it had been remarked by neighbors, for a few weeks, that she was more pale than usual.

The following is from the local paper: "At about 7.30 o'clock on Friday morning, April 17th, 1891, Mrs. A———, wife of a prominent local dentist, dropped unconscious while busily engaged in her domestic duties of the morning.

She had come down stairs with a lamp and water glasses in her hand and had reached the door which opens into the sitting room, when she fell backwards. No one saw her fall but her son, who had passed her room while she was dressing, and gone up stairs to his room, soon came down and found his mother prostrate in the hall. He immediately called his father, who was working in the garden, who reached the side of his wife in a few seconds. He worked over his wife and got her to breathing rather artificially for about ten minutes. In about twelve minutes from the time Mrs. A——— was discovered, Dr. Whitman reached the house, but the heart-beat had ceased.

During the night before, she had been kept awake most of the night by the baby, who had a severe bronchitis, and the Doctor also not being well, she had taken the entire care of the baby, although it was unusually hard for her, and she was very tired. At about 6.30 o'clock, the Doctor took the baby down stairs, leaving his wife to rest, the last he saw her alive."

Autopsy, April 18th, conducted by Doctors Whitman, Albee and myself. The thorax was opened, and the lungs found normal in appearance, collapsed, the diaphragm being crowded up by the gravid uterus. The abdominal cavity so far as examined, was found normal; the uterus was opened and found to contain a well developed female fœtus. The heart being sought was found normal and in systole, it was dissected from its place and taken out. In severing the arteries and veins considerable blood rushed out; nothing abnormal was how-

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ever found, until the pulmonary artery was cut, when a large semi-organized clot slipped out. This clot evidently filled the whole length of the artery from the valves to the first division; the distal or pulmonary end appeared to be a recent clot and solid, while the cardiac end was more fully organized, and on closer examination found to be tubular.

Sudden death from pulmonary embolism during the puerperal state is not uncommon, and also in some other conditions supposed to favor the coagulation of the blood in the viens; but during gestation few cases have been reported.

Dr. J. S. Billings, of the United States Army, informs me that there is no case reported in their library at Washington that corresponds precisely to this. The nearest to it is, perhaps, one that is reported by Dr. Smith in the *Association Medical Journal*, London, 1853, page 441, in which a lady aged 20, near the end of her second pregnancy, while laying in bed dressed, suddenly cried out and died suddenly On examination, forty hours after death, the pulmonary vein was found to contain a cylindrical coagulum, the outer layer of which was free from red corpuscles.

Dr. Billings further adds: There are of course a large number of cases of pulmonary embolism reported, some of which are connected with simple local thrombosis in the lower extremities; but I have not the time, at present, to examine these cases in detail, and can only say that I do not remember having seen an account of any such case occurring in the latter months of pregnancy.

I had intended to include in this paper some reported cases of pulmonary embolism, and suggestions from authors; but have not been able to give it the necessary time, hence I close with a few words of theory or suggestions which may lay me open to criticism, and I hope may draw out discussion.

Pulmonary embolism as we all know is not an unusual result of the breaking up of a thrombus of the illiac or femoral vein, the fragments of which form the primary obstruction.

But in this case I believe there was a thrombus of one of these veins which broke up or disappeared about the time the lameness was relieved, leaving no other symptoms that were observed at the time; but it seems to me possible, and perhaps probable, that a fragment of the clot was carried along and lodged just behind the semilunar valves of the pulmonary artery: the ebbing or retarding of the current at this place a each beat of the heart would favor this result, and this fragment might thus form the nucleus for the secondary thrombus, which was thus several weeks in forming and becoming semiorganized, lining the whole interior of the artery and narrowing its passage, and the sudden death may have been caused by the final loosening of the whole thrombus, or a portion of it, or even the forming of new additional clots, either of which might plug the whole artery.

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INDIGESTION AND ITS RELATIONS TO DISEASE.

By Dr. C. W. Peck, Brandon.

In the discussion of the question, indigestion, and its relations to disease, it is first necessary that we have well defined ideas on the subject of indigestion.

Indigestion is defined by Dunglison as a state of the stomach in which its functions are disturbed, without the presence of other diseases, or when, if other diseases are present, they are of but minor importance. He goes on to some length to point out the symptoms of indigestion, which are not especially relevant at this time. My own idea of indigestion is, that it is a physiological disturbance of the whole or a part of the digestive apparatus, whether it be in the stomach, directly after a meal, or a torpid condition of the colon with constipation in consequence of a changed condition of the secretions—the mostfrequent cause of this so common a malady.

To study indigestion in its broadest sense we must study it in its relations to the other systems, the nervous, the reproductive, the circulatory, the muscular, and the respiratory. The influence which a disturbance in one of these systems exerts over the others can scarcely be realized, even when carefully studied. Examples of this kind are constantly being brought out by specialists, where the correction of a single nerve strain of the eye regenerates the whole being, and brings order out of chaos.

On the same general principles the general practitioner should carefully study the almost daily digestive disturbances arising among a certain class of his patients. It is a well recognized fact that the act of digestion calls into use almost the entire organic nervous system, and that a failure on the part of the nervous system to perform its work normally, during this act, causes a poisoning of the blood and nervous centres, changing largely the quantity and quality of the excretions, especially the most important one, the urine. It is only when we realize that the large majority of neuralgias, rheumatisms, and nearly all inflammatory actions, as well as the long list of so-called summer diarrhœas, are primarily due, largely, to indigestion, from one cause or another; and our inability to cope successfully with any of this multitude of ailments without first correcting the indigestion, if it exists, that we recognize the fact that good digestion is the *sine qua non* to health and strength.

I said indigestion was a physiological derangement of the whole or part of the digestive apparatus. Among the various organs in this system I think most importance has been attributed to the stomach, which I believe is a mistake. The stomach is not long-suffering, but is a prompt

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witness in case of abuse. It is a cavity for the temporary storing of the food, in connection with a secreting surface, which, although its function is all important to a well regulated digestive apparatus, yet it must rank as second compared with the great liver, which is a gland the full importance of which in the economy years hence may be appreciated, but to-day it is not. Be that as it may, these several digestive organs are only parts of one great whole which has the work of converting the various substances called food into a pabulum for the support of the body, and here is possibly the most important point for us as medical men to consider, because indigestion is unquestionably more frequently caused by an unwise selection of food than by any other one thing.

A glance at our Physiologies will teach us that there are among the proximate principles the carbo-hydrates and the nitrogenized substances which have each their relative value as foods.

Nothing is more common than to see people eating the very things they ought studiously to avoid : not knowing that certain articles of diet will do a certain work in the system : that the C H O compounds can never do the work of the nitrogenized substances, and that the nitrogenized substances are the only nerve tissue producers : that good digestion depends largely upon nerve force, and nerve force upon proper nutrition.

It is a well recognized fact among physiologists that the C H O compounds are not muscle producers ; that there are a multitude of people all over the world to-day starving on sugars, starches and fats, loaded down with adipose tissue, with scarcely muscle enough to carry their burden ; with sugar and albumen in their urine ; œdema of their lower extremities, and a train of nervous symptoms that would stagger a Weir Mitchell, and all from the fact that they are trying to make the carbo-hydrates do the work of the nitrogenized substances in the system, and thus ruining their digestive and excretory organs by the process.

Practically we should feed our patients so that they can get the greatest amount of benefit with the least amount of effort in digestion. The man who taxes his system to oxidize a large amount of the starches, sugars and fats, at the expense of the nitrogenized substances which he needs for nerve force and strength, will find at the end of a year that he has not only impaired his constitutional strength, but has loaded his blood with impurities which may culminate at any time in an attack of neuralgia or rheumatism, or if associated with exposure, any form of inflammatory action outside of a specific germ disease. We must constantly bear in mind that we are in a state of sepsis, unpleasant as the thought may be, and that we are largely so from the incomplete work of our digestive organs from improper feeding, and consequently incomplete oxidization.

The celebrated English physician who said "Neuralgia was a cry for better blood," made a statement well worth remembering, but if he

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had added, "in consequence of improper dieting" he would have covered the whole ground. If that is a fact—and it is so stated by authority—that the system is not capable of adding free nitrogen to a C H O compound to form a protein substance, then the starches, sugars and fats can furnish no nutriment to the system, only as they give heat, energy, lubrication and rotundity; and this we believe to be true, and that the process of oxidation and elimination of urea from the blood is thus impaired.

Among those subsisting largely upon the starches, sugars and fats, the consequent accumulation of impurities soon manifests itself upon the nervous system through the nerve centers. All are liable to suffer, but especially the nervous, in some form of neurasthenia; the muscular, in the form of rheumatism; the reproductive, in the various menstrual derangements and temporary congestions; the respiratory, in the form of colds, pleurisy, and pneumonia; the circulatory, in the action of the heart, so common to people suffering from nervous dyspepsia, as illustrated in extreme shortness of breath and palpitation of the large blood vessels. The reason why one person should be taken sick and another not has interested me for some time. I believe a solution of the question can be had, and I think a correct one.

I have no hesitancy in saying, what I have seen verified in my own practice hundreds if not thousands of times, that the individual who takes cold first, other things being equal, is the one whose blood contains the most impurities. On general principles the same common law holds good in all diseases.

There are two principal sources for these impurities or poisons in the system: One is external, pertaining more especially to specific germs; the other arising from impurities caused by incomplete digestion and oxidization.

You will all bear me out in the statement that the patient, as a rule, who gives you the most anxiety, with pleurisy, pneumonia, or tuberculosis, is the one with impaired nutrition from bad digestion, and you will accomplish more than any other man in the profession when you cure *either* without first correcting this, so common, a condition. This can only be done by a natural process, which is, to supply the normal demands of the system under the existing circumstances.

Take for example any of the derangements coming under the head of gastro-intestinal irritations, and I venture the opinion that neither of them was ever permanently cured without first correcting the diseased condition of the secretions, which can never be done so long as your patient is laboring under the accumulated poisons of inocmpletely oxidized substances in the blood and liver. One has only to study the various manifestations upon the nervous centers in cases where the blood is load-

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ed with these poisonous elements of incompletely oxidized substances in the blood and liver, and he will see as a result a shock upon the nervous system producing a chill, delirium with fever, and a changed condition of all the excretions, especially the urine, a disturbance of the organic nervous centers, as manifest through a derangement of the stomach, kidneys and bladder, ending possibly with rheumatism or neuralgia, or both, and all from the imprudent or unwise selection of food at a single meal added to a previously bad condition.

What the result would be if this practice goes on for months, and sometimes for years, as it does, can only be known by those who study the subject carefully, with a full knowledge of the facts that there is a limit to the system's power to oxidize its various foods, and that which began as a simple functional derangement may later on become an incurable organic lesion. There is no doubt in my mind that there are plenty of fatal cases of Bright's disease of the kidneys, associated with organic disease of the heart, caused by improper eating, which is as injurious, many times, as improper drinking of alcoholic beverages.

Beginning as a functional derangement in consequence of too liberal an indulgence in quantity and variety of foods, loading the system with unoxidized poisonous substances, which in going the rounds of the circulation do their slow but sure work, first in producing a functional derangement, then organic changes, which finally ruins the organ and then the individual, all of which can be avoided by a more careful attention to diet.

In conclusion, I would not be understood as excluding the starches, sugars and fats from the list of useful articles of diet, or as charging them with all the ills to which flesh is heir, but rather as giving them their proper value in the economy. And if by these few, brief and disconnected remarks I shall have led you to think upon this long neglected subject of physiological therapeutics, I shall have accomplished all I expected.

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SOME EUROPEAN LESSONS.

By J. Henry Jackson, A. M., M. D., Barre, Vt.

America is called a nation of teachers. Her daughters begin their vocation while in their teens, and continue it through life, and her sons co-operate with them in making life in this good world successful.

If any man shall say that the teachers of this nation are not the "smartest" on earth shoot him on the spot! His usefulness is at an end. They have taught other nations several useful lessons, and Europe may still attend our schools and derive wisdom therefrom. The brighter people of the old world are coming by every steamer to find in the bounteous bosom of the Great Republic the blessings of equality and true fraternity. They come to form part of a great people, free from class distinctions and kingly rule, who shall add to our greatness, even as they receive of our abundance. We welcome them as free men when once they have set foot upon our soil. Let all self-appointed rulers of Europe learn that before many more seasons have passed the thrones and insignia of rank shall totter and fall, and then shall be government of the people, by the people and for the people.

Says George Elliot: "I can imagine the coming of a day when the effort to relieve human beings in distress will be as involuntary on the part of the beholder as to clasp this mantle would be this moment were I about to fall." So will soon be the involuntary stretching forth of the hands of the people for self-government.

One hundred thousand Europeans are coming monthly to learn from us the secret of our nations' success. Let our teachers go among them and develop them into the best of citizens, and make of them the strongest of men, intellectually and morally, so that when they revisit the old world, and see the pil from which they were digged, they may bring back to us some items of information which they may collect.

Possibly they will tell us that the Europeans are a very *deliberate* people, that "plenty of time" is the sentence which governs every act. There is no street in London, Paris or Berlin where the people seem hurried, and if one enters a shop he notes the same leisurely manner that is seen on the street. In a restaurant an excellent dinner will be served but never in a hurried way, so that one course may be thoroughly discussed before another appears. There is always plenty of time to answer a civil question, or to direct a stranger, or to assist a lady.

The same holds true of their conventions and associations, where the papers show careful preparation and thoughtful study; but there is also time for receptions, banquets and lawn parties. In our own pro-

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fession we recall the names of Klein, Paget, Virchow, Billroth, Tait and Lister, as men whose deliberations have been accompanied with success, and their teaching will be felt during many generations.

Our European cousins are *careful*. We could teach them much concerning comfort in railroad cars, and everything about our complete baggage-checking-system, of which they know nothing, but they can give us lessons in safety. They place you in a "compartment" of one of their "coaches" after you have secured your ticket in the "booking-office," and fasten your door. The "luggage" is carried to the "luggage van," and must be claimed by you at the end of the trip. Your speed may not exceed thirty miles an hour, but it is seldom an accident occurs. If you would cross the track you must climb some stairs and cross on a bridge. Such careful vigilance is maintained that a suicide would be almost impossible upon the railway track.

In whatever portion of Europe you may venture you will receive *courteous* treatment. Said a Western physician to one of London's finest, "say Coppy, direct me to the London Tower." The policeman looked down upon the little American and answered good-naturedly "In London we say please." Said the surprised doctor afterward, "I was captured by a Britisher once, and don't you forget it." It does not seem a hardship for one to go several blocks out of his way to direct or aid an enquiring stranger, and I assure you, I have more than once been placed under obligation by gentlemen whose language I did not understand, but whose kind and courteous acts will remain a living memory, easily interpreted.

The Europeans are *careful*. I have studied them in their homes and in public, at the church and club, and they are everywhere the gay, jolly men and women who give to life a new interest and joy. Their professional men carry with them the brightness and goodwill which should characterize those whose mission it is to heal and to save. These qualities often succeed quite as well as medicine in the process of recovery, and are now acceptable to patient and friends alike.

These foreign relatives are *sturdy*. The men are robust and sinewy, as is well seen in the regiments of German soldiers. From boyhood athletics are duly blended with arithemetic, and muscle is developed as well as music. The women are strong and deep breasted, and fitted by substantial food, and exercise in the open air, for the duties of companionship and maternity. Many volumes of sympathy have been written because the women of the great laboring class are so much occupied by out door work, but in the merry groups of haymakers and harvesters the toil seems to be pleasantly borne, and one could well believe that many a story and joke are intermingled with the work.

And I am glad to say that when the young women reach the cities,

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and establish homes of their own, they do not forget the health giving air of heaven; but on the lawn, or in the yard, or on the narrower piazza, they place their tables for the evening meal, and in this way maintain for themselves and their families the greatest measure of health.

Finally, I have learned that our foreign friends are *cleanly*. The larger streets and parks of the principal towns are models of cleanliness. Hansoms and cabs with rubber tires run noiselessly over the smooth concrete, and every night the pavements are thoroughly washed with water.

The people themselves, as a rule, are tidy in their personal appearance, and the food is served in a most appetizing way by cleanly waiters and waitresses.

Of late much attention has been given to cleanliness in surgery and in midwifery, and I am fully persuaded that this is one of the lessons we must each commit most sacredly to memory and reduce to practice. All surgeons and accoucheurs should understand the antiseptic treatment of wounds, and practice it, or they should stand aside and allow better men to do the work. Antiseptic methods save life and prevent suffering. And this exalted degree of cleanliness is the latest and best of our European Lessons.

HEART SOUNDS AND CARDIAC MURMURS.

By D. C. Hawley., M. D., Burlington.

The study of heart sounds and cardiac murmurs, with reference to their diagnosis by physical signs, requires an accurate knowledge of the anatomy, and physiological mechanism of the heart.

By heart sounds we mean the normal sounds produced by the action of the heart, while new or additional or adventitious sounds are called Cardiac Murmurs. Murmurs are not modifications of the normal heart sounds, but are new sounds, which are added to, or take the place of the normal sounds, on account of mechanical defects in the action of the heart. These mechanical defects are usually the results of pathological lesions.

The præcardial region or præcardia, is that part of the surface of the chest, which immediately overlies the heart. The upper boundary of this space, which corresponds to the base of the heart, is a horizontal line drawn across the sternum at the level of the third costal cartilage. The lower boundary is a horizontal line drawn through the fifth inter-

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costal spaces. The left lateral boundary is a vertical line situated three and one-half inches to the left of the median line of the sternum, while the right boundary is represented by a similar line, situated four or five lines outside of the right margin of the sternum. The apex of the heart is found in the fifth left intercostal space three and one-half inches to the left of the median line of the sternum. I think this a better and more accurate description of its position, than to say it lies just within the linea mammilaris, for the reason that the nipple varies much in different persons in its relative position to the median line of the body.

The heart sounds consist of two successive sounds, following each other in a perfect rythmical relation, and with a short interval between them called the short pause of the heart.

After the two sounds of the heart is a longer interval called the long pause. The two heart sounds are called respectively the first and second sounds. The first sound is longer, duller and louder than the second. The first sound corresponds with the systole of the ventricles and with the apex beat, while the second is synchronous with the diastole of the ventricles. In health there is no trouble in distinguishing the two sounds. In diseased conditions of the heart, the two sounds are apt to be confounded with each other, but may always be distinguished if we remember that the first sound corresponds with the apex beat and with the carotid pulse.

Regarding the mechanism of the production of the heart sounds, there has been a diversity of opinion. I believe all are agreed that the second sound is caused by the sudden closure of the aortic and pulmonary semilunar valves. The first sound is probably caused by the forcible tension of auriculo-ventricular valves, the contraction of the muscular walls of the heart, and the thumping of the apex against the parietes of the chest.

Cardiac murmurs are, as I have said, usually the result of valvular lesions. They are classified as direct or obstructive and indirect or regurgitant murmurs. All endocardial murmurs, are produced by the blood flowing in a normal or in an abnormal direction.

* "The common law which governs the seat of development and the transmission of all cardiac murmurs, may be stated as this: The abnormal sound called a murmur, is heard with greatest intensity, just beyond the point of its development and is transmitted from this point, forward or backward in the direction of the current of blood, which, together with the valvular defect, is the cause of the murmur. Forward and backward in this instance refer to the current of blood and not to the antero-posterior positions of the body."

With reference to the left side of the heart, we may have a mitral

*Porter.

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direct and a mitral indirect murmur, an aortic direct and an aortic indirect murmur. A mitral direct murmur is produced by the blood flowing in the normal direction, through an obstructed or roughened auriculo-ventricular orifice. It is heard with the greatest intensity over the left ventricle, at the junction of the fourth rib on the left side with its cartilage. With reference to the ventricular systole, this murmur is diastolic in character,—it follows the second sound of the heart. In other words it occurs during the long pause of the heart and is synchronous with the contraction of the auricle.

The mitral indirect murmur is systolic in point of time, and is produced by a current of blood, which, by the ventricular contraction, is regurgitated through an incompetent mitral orifie. It is usually blowing in character, and is heard with the greatest intensity at the apex. It accompanies the first sound and is transmitted below the apex and to the left, along the sixth rib, and may also be heard behind, between the eighth dorsal vertebra, and the inferior angle of the scapula, on the left side.

The aortic direct murmur is also systolic in point of time, i. e. like the mitral indirect murmur it is produced during the ventricular contraction. It is caused by the direct current of blood flowing through an obstructed aorto-ventricular opening. It is not heard however, at the apex, but just beyond the aortic valve, in the second intercostal space on the right side and close to the sternum. It is transmitted in the direction of the current of blood which produces it, i. e., along the greater blood vessels, and may usually be heard over the sub-clavian and carotid arteries. It may also be heard behind over the fourth and fifth dorsal vertebra, this being the point where the aorta strikes the spine. The aortic indirect or regurgitant murmur is diastolic in point of time, and is produced by current of blood being forced back through an incompetent aortic opening by the recoil of the large arteries. It accompanies the second sound of the heart, and is heard just behind the aorto-ventricular opening, or in the third left intercostal space, close to the sternum. It may also be transmitted down the sternum and heard at the ensiform cartilage.

In the right side of the heart there may be produced four murmurs, corresponding to the ones we have described in the left side of the heart. These are called respectively the tricuspid direct and indirect, and the pulmonic direct and indirect murmurs. All of these four murmurs are extremely rare and of no practical importance so far as physical diagnosis is concerned. In the first place lesions in the right side of the heart are seldom found in adults, and secondly, when present they are usually the result of lesions at the mitral and aortic orifices, and are so masked by murmurs at these orifices that they cannot be diagnosticated.

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All valvular murmurs, as we have observed, either precede, take the place of, or immediately follow one of the heart sounds, and having distinguished these sounds from each other, we may easily determine the rhythm of a murmur. When we have done this, our diagnosis is completed by determining its seat. We shall be able readily to do this if we bear in mind the areas to which murmurs, arising at the different orifices, are propagated, and these we have already stated. Furthermore, I believe we shall always be able to determine the character of a murmur, by reference simply to its area, and direction of transmission, without studying its rhythm. Thus a murmur which is heard in the right second intercostal space close to the sternum, and is transmitted in the direction of the greater blood channels, is always an aortic direct murmur.

A murmur heard in the third left intercostal space close to the sternum, and often distinctly heard at the xiphoid cartilage, is always an aortic indirect murmur. Again, a murmur heard over the fourth rib, on the left side, at its junction with the corresponding costal cartilage, is always a mitral direct murmur. This murmur is not transmitted, but is heard only within the limited area here described.

Finally, a murmur heard at the apex and transmitted below and to the left, as far as the anterior axillary line, is always a mitral indirect or regurgitant murmur.

Having become familiar with the location of these areas, and bearing in mind the direction of transmission of the different murmurs, their diagnosis is extremely simple.

Two, three or even four of these murmurs may be found in combination, but having become familiar with the above points in their diagnosis, their differentiation is not difficult.

There is another class of murmurs, of considerable importance, to which we will briefly refer. These murmurs are not produced by endocardial lesions, and are called inorganic or chlorotic murmurs. Their cause is somewhat theoretical. They are due, however, to changes in the blood produced by anæmia, and probably also in part to innervation of the heart muscle from the same cause. These inorganic murmurs may be present at the mitral or aortic orifices, and may be either direct or indirect.

Indirect murmurs are far more common than direct, and of these a murmur at the base is oftener present than one at the apex. This indicates the preponderance of the aortic indirect over any other variety of chlorotic murmurs. These murmurs are heard over the same areas, and are transmitted in the same manner as organic murmurs.

A chlorotic murmur is usually soft, and blowing in character, and is accompanied by the general signs and symptoms of anæmia. These

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murmurs usually disappear under treatment directed to the general condition.

Dilatation of the ventricles is sometimes produced in connection with these chlorotic conditions, as evidenced by changes in the location of the apex beat. This dilatation of the ventricles sometimes causes organic lesions, principally at the mitral, and occasionally also at the aortic orifice. In other words, and finally, the cardiac condition in chlorosis sometimes culminates in permanent organic lesions.

ALBUMINURIA: ITS DETECTION AND SIGNIFICANCE.

By Fred L. Ladue, M. D., Alburgh Springs, Vt.

When Catugno, in 1770, discovered that there was in the urine a substance invisible to the naked eye, which was held in solution but became coagulated by contact with heat, there never had been an attempt made to examine the urine chemically. This pioneer in urinary analysis had not the least idea of the importance of his discovery, nor had others until 1798, when Cruikshank pointed out its relation to dropsy. But it remained for Richard Bright, in 1827, to establish its connection with a class of diseases now familiary known as Bright's.

At that time the medical world was not wrestling with obstruse pathological problems nor discussing the question of functional, physiological or cyclic albuminuria, nor spending hours in trying to ascertain by delicate combination tests that all urine contained infinitesimal amounts of albumin that had no earthly significance. These interesting points have been left to a more exact and discriminating profession of this,—or more probably—of a future generation.

Before establishing the fact of albuminuria it is necessary that all of our means of investigation are thoroughly reliable, and have the weight of authority from our most eminent scientists. It is to the small quantities of albumin and its relation to health that this paper deals with, and not these plain cases of kidney disease where the quantity and persistence of albumin and the microscopical examination demonstrates beyond all peradventure the presence of lesions of the kidneys.

Tests innumerable have been proposed varying all the way from the rough bubble test of our forefathers to the latest phospho-tungstate and picric acid of Oliver. Our immediate ancestors proposed to find it by pouring the urine rapidly from one bottle to another, when the interior

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would be occupied by bubbles, which would remain a longer or shorter time according to the amount of albumin contained therein. Methods multitudinous have been proposed to find the presence of albumin, some rough, many simple, and a few exceedingly complicated. A brief review of the more important ones is all that can be attempted.

The ordinary heat and acid test is, without doubt, the most popular and simple. One precaution is necessary. If too much acid is used the precipitate will be redissolved. Every one is familiar with Heller's, the nitric acid or ring test. It is certainly one of the prettiest tests. A modification of this which will detect minute traces, sufficient for ordinary purposes, has proved very valuable to me. Instead of floating the urine on the acid, warm both urine and acid in separate tubes, then fill a pipette with the warm acid and introduce it to the bottom of the urine. The advantage claimed is that the reaction is more sharply defined and the acid urates are not precipitated in a warm urine.

Next to Heller's, Tanret's has derived the greatest popularity. In 1872, Tanret, a celebrated Parisian pharmacist, made known the test that has since been known by his name. This test is a double iodide of mercury and potassium, and is exceedingly sensitive.

Potassium iodidi,	8.32 gram.
Hydrargyri bichloridi,	1.35 "
Acidi acetici,	20 c. c.
Aquae distil, q. s. ad.	100 c. c.

Dissolve the iodide in slight excess of distilled water. Dissolve bichloride in another glass in a few drops of water to produce paste. Pour upon this gently the first solution and agitate constantly. Stir and add water, drop by drop, until redness disappears. Add the rest of the water and acetic acid. This will preserve a long time. Fouler says that this is most delicate, and Capitan says that it will show 1 part in 300,000. It does not precipitate urea or salts. In 1875 Mehin found that it precipitated peptone and semen.

It remained for an American to discover the test that is admitted to be the most reliable of all and most easily used, and that is Millard. The following is the formula:

Carbolic Acid, 95%,	2 parts.
Gla. Acetic Acid,	7 "
Liq. Pottassae	22 "

Clarify the urine before testing. In using this avoid heat and the urates and peptones will be avoided. If mucin is present it will form a dusty turbidity above the line of contact. The disk caused by Tanret's is pale and diffused; that by Millard's more distinct, but very thin.

Among the other numerous tests is Oliver's tungstate of soda. It is cheap, easily prepared and highly recommended by Millard. It gives no reaction with quinine and does not precipitate the parapeptones.

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It detects about one-tenth per cent. Roberts' brine and picric acid test though delicate, is objectionable by producing a precipitate with para-peptone and protean compounds. Picric acid throws down mucin, quinine and the oleo-resins but they disappear with heat or alcohol. Trichloracetic acid is more sensitive than acetic acid, and quite as reliable. Metaphosphoric acid does not precipitate quinine and very slightly artificially prepaup peptones, and is considered very delicate.

Posner has recently made known a method of detecting a small amount of albumin which is a modification of the method advanced by him in 1886. He precipitates the albumin with alcohol, then washes with hot alcohol, then with cold ether. This is then thrown upon a filter and concentrated hydrochloric acid added. If serum-albumin is present a beautiful violet color is obtained.

In a recent work by Dr. Oswald Vierodt on "Medical Diagnosis" a chapter on urinary analysis is concluded by the opinion that heat, nitric acid, acetic acid, ferrocyanide of potassium and picric are about equally accurate. This is the same opinion held by Dr. Vaughan, of Ann Arbor, and lately expressed at the Congress of American Physicians. At this Congress Dr. A. H. Smith, of New York, read a paper on the subject. He uses chloroform, and passed around a sample of precipitated albumin from this drug. He was challenged by Dr. Griffiths, of Philadelphia, who claimed that the precipitate was only an emulsion, and that he could get the same result in a less degree with water.

In France, Tanret's test has been considered superior to all others. In a work recently issued in Paris by Lecorche and Talamon, written after exhaustive experiments with the delicate combination tests for minute quantities of albumin they say, notwithstanding the French trait of national preference, "We have no hesitation in giving the preference incontestably to the American author." (Millard.)

The question as to whether albumin may or may not at times be found in the urine of people apparently healthy has been fervently discussed for several years, and many opinions formed as to the reality of innocent, functional, transitory, recurring cyclic albuminuria. It is now fifteen years since the subject was first broached, and nine years since Senator ascertained to his own satisfaction that there was such a condition as "physiological" albuminuria. He believed that the source of the albumin was in the periodical desquamation of the epithelia and tubules of the kidney. After examining a great many samples of apparently normal urine, Grainger Stewart claims to have found albumin in one-third, Stirling in forty-four per cent, Capitan in forty-five per cent and Posner in nearly all. Some others state that they can find it in all. In view of such sweeping statements from so many eminent men it behooves us to be on our guard lest by a hasty opinion we render

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a human existence miserable,—for the word "Bright's" carries terror to the people. To the ordinary medical mind the idea of a normal albuminuria is as preposterous as the idea of a normal hæmoptysis or a normal vicarious hæmatemesis. Can albuminuria exist without diseased kidneys and yet have the microscope reveal the presence of hyaline and granular casts? These dreaded ocular demonstrations are supposed to complete the diagnosis of Bright's, but Sir William Roberts says: "A few hyaline casts may be seen, but in other respects albuminuria may be perfectly normal, but as a rule the urine contains no urinary derivatives." Johnson says that small hyaline and epithelial casts may be present and recovery confidently predicted. Edes says: "A few casts may accompany a very slight amount of albumin, and have no meaning." Janeway says: "Hyaline casts may appear in the urine, quickly formed and as quickly disappear." While these, and some others hold these sanguine views, there are many equally authoritative who insist that such things can not be without organic lesions of the renal organs. Again Dr. Lambert, Medical Director of the Equitable Life Insurance Co., writes Dr. W. B. Davis: "I am convinced that the presence of an occasional cast does not necessarily imply destructive or permanent disease of the kidney." Grainger Stewart says that he has often seen sudden and copious occurrence of albuminuria with numerous casts, the process lasting only a short time, and recurring at intervals, and have never known them to prove permanently injurious. With such overwhelming weight of testimony can we be blind to the importance of a carefully studied opinion when considering the significance of albuminuria in view of the effect such an opinion may have on the mental and physical welfare of our patient?

In studying the etiology of transient albuminuria we find that among the principal causes, where they can be ascertained, excessive and prolonged muscular exercise seems to be the predominant factor. Thus Pavy found albumin lasting for twelve hours in Weston's urine after he had performed his first pedestrian feat in England. He also found hyaline and granular casts. Wells says that a patient of his always had albuminuria after a boxing lesson. Mental strain as well as muscular has produced it, as has been often seen in medical students, who were under the strain of examinations. Another case occurred in an excessive smoker. Dr. Mason records a case of a man who had albumin only at night. If he lay on his right side or on his back only a trace appeared. If on his left side there was an abundance. Extremes of temperature both hot or cold has caused a rise of the percentage of albuminuria in the statistics published by the insurance companies. Cold bathing, oxaluria, a neurotic condition, hæmoglobinuria are cited as other causes. If then, there are no lesions of the tubular structure of the kidneys we must then account for these cases by a change in the

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blood pressure of the kidneys. With a low arterial tension, such as we would naturally expect from such causes, there necessarily exists a static condition of the blood and the reverse in high tension. With this static condition the process of osmosis must be exaggerated. The serum-albumin of the blood drains through the epithelial cells, and the hyaline casts are moulds of the coagulated or concentrated albumin, while the granular casts could be accounted for only from a belief in the theory that the kidney tubules are constantly throwing off their worn out cells to be replaced as constantly by new, healthy epithelia—the same process that occurs in the whole human anatomy, and especially with secreting or excreting membranes. Dr. Burr says: "The question of functional albuminuria is largely one of physics, and should be so studied." Bartels says: "Perfectly healthy kidneys solely in consequence of an altered state of the blood pressure upon their vessels can excrete albuminous urine."

The diagnosis would be founded on these symptoms: If the albumin regularly appears and disappears; if the general health is unaffected; if the specific gravity of the urine remains 1020 or above; if the usual amount of urea is excreted; if granular casts do not persist; if dropsy continues absent, and also the usual concomitants of Bright's, such as cardiac hypertrophy, retinal changes, etc., then we are warranted in holding out such hope to the patient as will be deemed advisable in each individual case. But with all this evidence in support of the theory of a benign albuminuria the question still remains, which I think the next generation alone will be able to answer: Will these cases live their natural lives out without being undermined by the albuminous drain, or will they ultimately pass into one of the chronic forms of nephitis of which this would only be the first stage. Such men as Mahomed, Edes, Grainger Stewart, George Johnson, Pavy, Sir Wm. Roberts, Harley and others, have distinctly testified to the fact of healthy kidneys with albuminuria lasting from two to thirty years, and never passing into chronic nephritis. Yet a physician would be very unwise to allow himself to be severed from the path of duty by the recorded cases, and not always keep in mind the more serious results, and hence guard his statements accordingly.

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PATENT NOSTRUMS.

By L. W. Flanders, Burlington, Vt.

Mr. President and Gentlemen of the Vermont State Medical Society:—

I have ventured to bring this subject before you because I have never heard it discussed at a medical meeting; and, it seems to me, that it is an evil too apparent and wide-spread to be passed over without comment.

So far as I know, there has never been any decided movement made on the part of the profession towards exposing the patent medicine frauds with which the country is filled. There have been one or two Journals started with this object in view, but they have failed for lack of support on the part of the public, and the violent opposition of the manufacturers of these secret preparations. We all know how much faith the general public has in patent nostrums. As practitioners we find them every day, not only in the hands of the ignorant; but, also, among those whose educational advantages have been of the highest order. I well remember my surprise upon seeing a gentleman of my acquaintance, a man of more than ordinary ability in business matters, bring forth a bottle of Warner's Safe Cure, and take a huge potion before breakfast. I asked him if he had any "Kidney difficulty" and he replied, "No; but there is a great deal of Bright's disease going about, and I don't propose to have it creep on to me if I can help it." This would lead one to think that he was an enthusiast in prophylactic medicine, but he was not; for, he had a cess-pool within ten feet of his well and no amount of patient argument would convince him that they were dangerous neighbors.

The people from whom patent medicine men reap their richest harvests are those who are suffering with chronic and long-continued diseases. Wearied with continual suffering and disappointed in the efforts of their physicians, they grasp eagerly at anything that affords a prospect of relief, and the knowledge of these "cure-alls" comes in spite of the most strenuous efforts on the part of the doctor. Our mails are loaded with circulars from the so-called "dispensaries" carrying masses of corruption, lies, and impurity into the very heart of our families. Our daily papers are full of advertisements designed to frighten the weak and timid into trying some celebrated nostrum. A large head-line, "MOTHERS DON'T LET YOUR CHILD DIE!" is followed by a description of the case of some little one who heard the "*Death-Angel*," in large capitals, fluttering over his head and was saved by a timely

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dose of somebody's Sarsaparilla. Then follows a list of trivial symptoms common to every growing child, declared to be the fore-runner of frightful disease, which a dose of the aforesaid Sarsaparilla will surely prevent.

The mode of approaching chronic invalids is crafty but not flattering to the profession. "You have suffered years; you have tried various physicians who have given you nauseous drugs and subjected you to needless operations," then in large black type, "*What benefit have your received at the hands of your physicians? None!*" (I quote literally.)

So much for advertising. Now let us see if these men give an equivalent for the money paid, and if their printed labels are true or false.

A fashionable journal which comes to my notice frequently, has a column devoted to correspondence with ladies. Every week comes an enquiry for something to improve the complexion. The answer is invariably, "Recamier Preparations, which are harmless and endorsed by the leading ladies of the country." Recamier Balm, when analyzed, contains, according to good authority, corrosive sublimate and oxide of zinc. It costs, at the highest estimate, ten cents; it is sold for one dollar and a half a bottle.

Dr. Herrick gives a description of his famous plaster; tells us that it has been the labor of years to bring it to perfection; and calmly informs us that the holes had to be cut in it to allow the deleterious matter drawn from the body by the plaster to escape.

Sometime ago I had a case of neurasthenia in which the patient had contracted the morphine habit in trying to get relief from insomnia. This I was endeavoring to break him of, and, upon the occasion of one of my visits, he placed in my hands a bottle of Scotch Oats Essence; warranted to cure all nervous disorders and to be a specific for the opium habit. This he was anxious to try, and was very indignant because I would not consent to it. The composition contained as I have since learned, one eighth of a grain of morphine in every teaspoonful.

Again, I had a case of heart-disease in a lady seventy-two years old. There was marked cardiac dilatation; a weak impulse; and, of course, the general œdema was very great. The patient received from a friend a package of "Dropsy Balls" with many recommendations as to their efficacy. They were fully three-quarters of an inch in diameter, a dark, pasty mass, looking like tar and molasses. The directions were to take one at night, and in the morning to follow with a teaspoonful of Epsom Salt every hour, until there had been fifteen or twenty movements of the bowels. The fee to begin with was fifteen dollars; and if a cure was effected, fifty dollars. It is needless to remark that

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the "Balls" were a blind, and the patient paid fifteen dollars for the advice and a pound of Epsom salt.

The latest montrosity I have met with is "Wm. Radam's Microbe Killer." The trade-mark consists of a picture of William armed with a metaphorical microbatic club, if you will allow me to coin a word, endeavoring to knock the skull off from the gentleman upon the "Pale Horse." This delightful medicine comes not in bottles, but in gallon jugs; two gallons in a case. Of course, it cures everything; but phthisis is the specialty. The patient is to drink it, bathe in it, inject it into his rectum, and in short fairly luxuriate in an atmosphere of this wonderful compound. According to the Druggist's Circular this remedy appears to be composed of Oil of Vitriol, four drachms; Muriatic Acid, one drachm; Red Wine, one ounce; Spring Water, one gallon. (The jug is the most valuable part of the combination; it is certainly worth twenty-five cents of any man's money.) The manufacturers print scores of testimonials of the wonderful cures effected by its use; setting forth how this one was nearly dead with phthisis and that one crippled with chronic rheumatism, but after taking a few gallons of Microbe Killer were permanently cured. Think of it gentlemen! medicine taken by the gallon, and yet there are those who claim that the Homœpathic school with its minute dosage is increasing in popularity!

What are such testimonials worth?

Some physician has claimed that he could get testimonials of cure as the result of a medicine composed of pounded brick; and I have no doubt but that he could. We have all performed miracles with brown-bread pills. A gentleman of my acquaintance consulted a doctor as to the advisability of putting a patent plaster upon his back. "You might just as well bind on a book-cover!" was the reply. Taking this literally the sufferer went home and actually bound on the cover of an octavo volume and returned in a few days to report a cure and to express his surprise that so common-place a remedy should be so efficacious.

Who can estimate the harm done by these unreliable preparations?

The most powerful and dangerous drugs are placed in the hands of the ignorant. Some of us have seen dead infants soothed into their last sleep by Mrs. Winslow. I, myself, have seen an old lady upon the verge of collapse from using Athlophoros too zealously; presenting the toxic effects of salicylic acid and colchicum. If the red label for poisons was faithfully carried out what a gorgeous array we should have upon the patent medicine shelf!

What can we do as physicians to remedy this great evil?

As a rule we are too luke-warm in the matter. We utter a feeble remonstrance occasionally but that is about the extent of our efforts. In many instances post-masters are paid to send lists of chronic invalids to the proprietors of "dispensaries." See that it is not done in your

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town. Enforce the law against traveling quacks and venders of secret nostrums. Attend to our chronic cases more faithfully. In many instances the patient resorts to quack remedies because his physician takes no interest in his case and does not visit him unless sent for. Above all, encourage analyses of these preparations and acquaint ourselves, as far as possible, with their constituents. The patient may say, "How do you know whether Warner's Safe Cure is good for my disease or not? you don't know what is in it," and he has the best of the argument. But if you can show him that he is paying a dollar for ten cents worth of salt-petre, you have a powerful argument on your side; you appeal to a most tender spot—his pocket.

Most of us have access to the Druggist's Circular, in which is published from time to time analyses of the more important patent preparations; so that with a little care we may be prepared to show our patient that his celebrated remedy has been used for years by physicians, and can be purchased in the regular way at half the price he paid for it.

"A STUDY OF NEW REMEDIES."

By W. H. Vincent, Orwell, Vt.

New Remedies, like new Doctors, are looked upon with suspicion.

1. Because they are often secret and so partake of quackery.

2. Because the rage for new drugs is absolutely fatal to accuracy of observation and precision in treatment.

3. Because no sooner is a new remedy placed on the market than everybody rushes to try it, and consequently the new remedy like the young doctor is closely watched, and if a moderate dose of antipyrine causes heart depression, like the young doctor losing his first case, it is apt to be condemned and considered no good—but this is no sign it should not be given another trial, or the doctor given another chance for nature to assist him in carrying his next serious case safely through to recovery.

You may get as unfavorable symptoms following some long used remedy or the doctor of 40 years experience may lose his patient, but it is considered a natural consequence and both are tried again with confidence.

My own experience with modern remedies in a country practice is limited and I have endeavored to confine myself to the practical suggestions of the best authors and hospital observations.

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The epidemic of la grippe of the past two years has given us a chance to thoroughly test modern antipyretics and analgesics and I wish to consider the most commonly used new remedies of this nature. In the search of chemists to produce quinine by synthesis modern chemistry has put us into the possession of a series of organic bodies which have the power to reduce the temperature of the body—and of these antipyrine, antifebrine and phenacetine are the best known, and have survived a rigid test and proved themselves of unknown value.

Every new remedy of late has been christened as anti something or anti nothing, and it will take some years yet to prove which may be allowed under the first list.

ANTIPYRINE.

Antipyrine was produced by Knorr by synthesis. It is a white crystalline body—slightly bitter and very soluble in water.

No sooner was this drug placed before the profession than numerous trials of its powers were made in the laboratory as well as at the bedside, so that at the present time we have a mass of experimental evidence which is stupendous.

The conclusions as to its Physiological action have proved that antipyrine lowers normal bodily temperature to some extent. It lowers febrile temperature to a remarkable degree.

It acts on normal temperature by lessening production of heat followed by a decreased dissipation. The same process takes place in fever.

The effect on the circulation is nothing, and it changes the composition of the blood only in excessive doses.

The quantity of urine is decreased, and *urea* and tissue waste is diminished.

It diminishes reflex activity by depressing the sensory and motor tract of the cord, and the motor and sensory nerves, the latter being the most affected.

An ordinary dose has no effect on respiration—in poisonous doses it causes death by respiratory failure.

It is rapidly eliminated by the kidneys.

Given for a great length of time in large amount it is distinctly poisonous by destroying the oxygen-carrying properties of the red *corpuscles*.

Antipyrine may be safely given in from 3 to 8 gr. doses—60 grs. have been taken, but with alarming symptoms.

By careful research it has been found the action of antipyrine to be of varying duration—usually from 3 to 9 hours, and after lowering the temperature it gradually rises. The descent is usually accompanied with hydrosis—the ascent with chilliness.

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The fall of temperature usually begins in one hour, and reaches its maximum in 9 hours.

The pulse and temperature usually fall together, but not necessarily.

In 100 odd cases reported by Hobart Amory Hare, in which the drug caused evil results, only 6 proved fatal, and in these there was ample cause for death aside from the drug.

In the commencement of pneumonia, typhoid and other fevers—acute rheumatism, erysipelas, and tuberculosis, in moderate doses it is a safe and promptly acting antipyretic.

Antipyrine governs the heat while the disease goes on to recovery or death; it quiets restlessness and relieves pain, and in this way assists nature to overcome disease.

It is not curative in its effect, as many think, but is used to treat the symptoms of disease.

In malarial fever it is powerless to prevent the return of a chill, but in combination with quinine it cuts short the duration of a paroxysm, and shortens the attack, and is of unknown value when the temperature remains persistently high by possessing the power of diaphoresis.

Quinine will not do this alone if the temperature is over 100 and over, and still rising.

Antipyrine increases the solubility of quinine and quinine intensifies the action of antipyrine by causing perspiration quicker and a decline in temperature more rapid. It gives a sense of almost immediate relief in fever during the hot stage, being readily soluble and quickly absorbed.

In intense throbbing headache with pains in loins and limbs, antipyrine acts as a sedative, and usually brings ease and refreshing sleep as the skin becomes moist.

In typhus and typhoid fever antipyrine in the first part of the disease shortens delirium and acts promptly on the nervous system—but the cold pack is a much safer remedy to reduce the temperature aided by antipyrine, if necessary, in continued fevers of chronic type.

In excessive outbursts of febrile paroxysms in children without acute disease underlying, antipyrine is of great value.

In all forms of neuralgia it is a powerful sedative—especially in hemicrania—the lancinating pains of locomotor ataxia and sciatica.

It has a favorable action on the generative organs, and many cases of threatened abortion have been prevented by its use.

I always give it for after-pains, and to check the rush of milk after confinement, and have never had a broken breast since I commenced its use.

It has been successfully used in diabetes by depressing the excitability of the central nervous system, and at the same time lessening the excretion of the solids and water of the urine. It should not be used

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over 12 days at a time and then alternated with the diet treatment, and its effects are most favorable in elderly, robust people, in which a more liberal diet may be allowed.

It has been used hypodermically in cerebro-spinal meningitis, allaying the terrible pain and course of the disease in 10 gr. doses repeated 8 times in 24 hours.

In 10 gr. doses it has cured chorea. In tetanus it has acted better than bromide or chloral, but its action needs careful watching.

For sciatica, combined with cocaine, 6 grs. of former to ⅛ gr. of latter, it is very useful subcutaneously.

For nasal troubles 16 grs. of cocaine to one drachm of antipyrine acts as a hemostatic—does not cause local numbness or dryness like cocaine alone, and is less liable to cause constitutional disturbances or the habit after continued use.

It often causes a rash like measles, scarletina or urticaria.

The dose recommended is from 10 to 20 grs., but in my mind the dose given in text books is too large, and it is much safer given in smaller doses and its action carefully watched.

Heat favors its action while cold hinders its effect. In cases of large doses being taken followed by paralytic symptoms, cold to the surface in the shape of ice bags will arrest its action, and prevent a fatal termination—an important point to be remembered.

Like all other drugs idiosyncrasies are not uncommon.

Antipyrine is contra-indicated in cardiac weakness, diphtheritic affections, after exhaustive hemorrhages, and in the last stages of consumption.

ANTIFEBRINE.

Antifebrine—although discovered nearly two years after antipyrine—has been fully as thoroughly tested and used as a febrifuge, as the experiments with antipyrine had taught what to look for in a similar drug.

The conclusions as to the action of antifebrine prove that it lowers normal bodily temperature and febrile temperature very rapidly. The fall of temperature in the normal animal was due to the decreased heat production and increased heat dissipation, and in fever the same rule holds true.

Applied directly to the heart it stops this organ in diastole. It is a cardiac depressant, causes a decrease in pulse force and rate and a fall in arterial pressure. It acts in toxic doses on the blood; has little effect on the urinary secretions, depresses the spinal cord, motor and sensory nerves, but not the muscles.

In toxic doses, death is due to respiratory failure.

Organic changes are produced by prolonged use. It is eliminated by the kidneys.

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Antifebrine is a white crystalline substance without odor, causes a burning sensation on the tongue, and is but slightly soluble. Its effect on the temperature is usually noticed in one hour, continuing from 8 to 10 hours, and the subsequent ascent is not followed by chills. It causes profuse sweating. The pulse becomes less frequent as the temperature falls and the arterial tension increases. Causes neither nausea, vomiting nor diarrhœa like antipyrine, although the drug possesses marked antipyretic properties ; it often causes great depression and collapse, but in such cases the dose is usually too large.

The fall of temperature is longest and most marked in typhus, typhoid and intermittent fever—less marked is pneumonia and pleurisy, and still less in puerperal fever. The profuse sweating it causes sometimes prevents its use.

In 81 cases of typhoid fever reported by *Guttmann*, 7 grs. was given night and morning until the 14th day with good results, and it was considered quite as good as the cold pack.

It is of considerable value in neuralgia and very useful in variola.

It quiets the nervous system and causes no rash. Acts favorably in rheumatism by controlling the fever and relieving the pain. In 248 cases treated by Guttmann as a specific it was found equal to salicylic acid, antipyrine and salol, and in some cases even better. He gave from 7 to 15 grains once or twice daily, and in none of the cases did he get cardiac complications.

Its effect in nervous disorders is similar to antipyrine.

Dose, 2 to 8 grs.—62 grs. have been taken causing alarming symptoms but with recovery.

PHENACETINE.

Phenacetine—a white crystalline tasteless powder, insoluble in water, lowers normal temperature and fever by decreasing production and dissipation of heat—has but slight effect on the heart circulation. Enormous toxic doses cause the blood to become dark and thick. It quiets the nervous system by depressing the spinal cord, particularly its sensory side.

How the drug is eliminated is yet unproved, chemical evidence proves it to be distinctly antipyretic and analgesic.

As an antipyretic it is very safe and powerful. Its action is noticed in ½ hour in fevers and continues from 4 to 8 hours.

In functional nervous diseases it not only acts as an analgesic but as a narcotic.

In typhoid fever it gives great relief to the pain in head, quiets restlessness and promotes sleep.

Idiosyncrasies are not uncommon, but it has superior qualities of being tasteless, causes no gastric irritation, no depression of heart and circulation, and the absence of cumulative effect.

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It is best given as an antipyretic in 7 to 10 gr. doses; as an analgesic it is best administered in single doses of 15 to 20 grs. instead of smaller doses every few hours.

The conclusions arrived at by comparing the three drugs just studied are as follows:

Antipyrine, owing to its solubility, stands first as an antipyretic, closely followed by antifebrine and phenacetine, the latter being much safer as it does not cause subnormal temperature or collapse.

Antipyrine acts quicker but the action of antifebrine and phenacetine are of much longer duration. Hence antipyrine should be used in dangerously high temperature and the others where moderately high.

Antifebrine is considered far best in exanthematous diseases of childhood, causing moisture, and in proper cases is perfectly safe.

In typhoid fever with high temperature, when you cannot use the cold pack, the choice lies between phenacetine and antifebrine. If you want to avoid collapse use the former—if prompt interference is needed use the latter.

In heat-apoplexy, sunstroke and hyperpyrexia antipyrine is indicated.

In temperatures from 108 to 105 antifebrine or phenacetine.

In fullness of the head from excessive use of alcohol phenacetine is the best.

The epidemic of la grippe gave us a chance to make a thorough trial of the three antipyretics and analgesics just mentioned, and quinine, so much lauded in the commencement of this disease, was soon discarded by me for these new remedies which proved themselves almost specifics, and the evil effects they caused were due, in my mind to the careless way the laity used them without the advice of physicians, and the evil effect being laid to the drug rather than to the carelessness of the consumer, where it properly belonged.

My note book shows 250 odd cases treated during the two past epidemics, of these the fever and neuralgic symptoms were treated by one of the above antipyretics followed by antiseptics and tonics, and I cannot recall a death due to la grippe, nor did I have any protracted recoveries.

We well know the germ of la grippe showed its effect at once by severe nervous symptoms and prostration, and the above remedies exerted their therapeutic properties by virtue of their strong affinity for the nervous system.

Older pathologists supposed fever to be due to superoxidation of bodily tissue.

Since the discovery of the antipyretic action of these coal tar products investigations show experimentally and chemically that the essential lesion of fever consists in a disordered state of the heat regulatory centers of the nervous system.

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SULFONAL.

Sulfonal—a comparatively new hypnotic, colorless, odorless, tasteless substance, has been thoroughly tested, and experiments prove that it reduces the excitability of the reflex function of the spinal cord, diminishes peripheral sensations; slows the respiration in large doses; does not affect the pulse rate; small doses (5 to 10 grs.) increase, and large doses diminish excretion of urea; it diminishes excretion of phosphates; has no effect on the fluid excretions of the urine. No cutaneous eruption has ever been noticed after its use; causing no flushing or perspiration: sometimes causes diarrhœa. In health a hypnotic effect is distinctly observed.

Sometimes causes a feeling of confusion, and a feeling of depression occasionally occurs.

It is valuable in functional nervous insomnia. In insanity it often produces sleep.

It is not equal to bromide or chloral, but better than paraldehyde. There is no habit acquired from its continued use, and there is no reaction following its effect.

It acts very slowly from its insolubility, and should be given from 1 to 8 hours before its effect is needed.

I have had a chance to try this drug several times in cases of melancholia, and found it of great service in giving sleep until I obtained benefit from other drugs.

There is a class of patients especially benefitted by sulfonal. They are business men who cannot sleep from anxiety or cares, and a morbid habit is often broken.

SALOL.

Salol—the new remedy for rheumatism and rheumatic affections, possessing the advantages over salicylic acid and salicylate of soda by being insoluble in water, and the gastric secretions, but readily soluble after it passes the pylorus. Its insolubility prevents nausea which some patients complain of in taking salicylate of soda, and is suitable in cases of weak stomach, causing no ringing in head.

It is broken up by the pancreatic juice in the duoduum into salicylic acid and phenol.

Sahli has used salol with benefit in rheumatism, chronic urticaria, suborbital neuralgia, as an antipyretic in diabetes, in intestinal catarrh, typhoid fever and catarrh of the bladder and urinary tract.

He has himself taken doses from 90 to 120 grs. without ringing of the ears or ill effects, and recommends it when salicylic acid and salicylate of soda are indicated.

Besides being antipyretic it is antiseptic in its action, and is indicated in typhoid and intestinal diseases. I have used it several

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times in cystitis and urethral catarrh with marked benefit, it acting as an antiseptic through the urine, and I always use it in typhoid fever for its antiseptic effect. It is very apt to affect the kidneys unfavorably, and is contra-indicated in all cases of renal inflammation.

It is composed of 60 parts of salicylic acid and 40 parts of carbolic acid, hence in large doses it may produce symptoms of carbolic acid poisoning, and it is best administered in pills of 3 or 5 grs.

There are many more new remedies that might be properly spoken of at this time but will leave them to be mentioned in the discussion if thought best.

The advance of materia medica has kept pace with surgery and science, and there is no doubt in my mind but modern theories will, at some time become realities, and that tuberculosis and cancer will have to give way to some of the remedies already or yet to be discovered.

PURE DRINKING WATER AND HOW TO SECURE IT.

The work of the physician is but partially accomplished in his attempt to cure disease. He fulfills his mission only when, in addition to his study of the nature and cause, he interests himself in the prevention of disease.

Within the last few years great progress has been made in sanitary science, and the work of preventing disease is being more and more appreciated by the people as they become educated as to its importance.

It is my purpose in this paper to discuss briefly and plainly the various sources from which drinking water is obtained, calling attention to impurities, that the danger from them may be avoided.

Let me first call your attention to the untold amount of filth of every nature and kind that is thrown upon the surface of the earth, where, exposed to warmth and moisture the changes of decomposition take place. This decaying matter sends out noxious gases that pollute the air we breathe, and the germs of disease are carried down into the earth, and ultimately find their way into springs, ponds, lakes and rivers, and thus contaminate the sources of water supply.

I ask you next to consider the sources from which drinking water is obtained. The most casual observer must often be impressed with the ignorance or indifference of the people in regard to the matter of water supply for family use.

I have to acknowledge also, that physicians come far short of doing their duty in regard to the amount of attention given to this important matter.

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The quality of water from wells I will next ask you to consider.

In sparsely settled districts water from this source may, perhaps, be considered, but in more populous towns it should always be looked upon with suspicion. If one should go through the State of Vermont investigating the question of the location of wells, not one in fifty would be found so located as to be free from all danger of contamination from unhealthy surroundings. While making an inspection of a public building not long since, and looking over the water supply, we were informed by the man in charge that at one time the well was valued for its mineral properties, but on moving the sewer to another part of the premises the water lost its mineral virtues.

Springs are streams or fountains of water flowing out of the earth, and fed by rains and snow on higher ground, frequently from long distances. Water from this source has always been considered to be of the best quality, flowing as it usually does, through subterancan chambers, and usually filtered by sub-strata of sand and gravel. But even this source may become contaminated, either from flowing through a stratum of muck (decayed vegetable matter) which manifests itself when coming to the air in a deposit of red or redish-brown sediment usually supposed to be due to iron in the water. Such water is not of good quality.

Again springs may become contaminated by surface sewage, either of animal or vegetable decomposition.

Public water supplies are sometimes from springs, but more commonly from lakes, ponds or rivers.

These sources are very liable to be made impure by being the receptacle of sewage. I know of many villages in this State that are supplied with drinking water from the very bodies of water into which they empty their drains.

The storage of water from water sheds is also in use. If the shed be free from danger arising from sewage of a farming community it may be all right.

Another danger of public water supply to which I would call your attention is the storage of water in reservoirs in large quantities.

Water long empounded, although of good quality at its source, may become deadened for the lack of oxygen. The pipes may become fouled, and the reservoirs produce growth of minute forms of plant life.

The next question of importance is how to detect the impurities of water. If sewage is discharged into a water supply, whether river, pond or lake, it must be considered impure.

It does not need a chemical examination to decide whether a body of water is polluted or not when one can see the sewage flowing into it.

But we are not able to see this, and we have to depend on other signs. If the well be situated near the cess-pool or privy vault the chances are that it may become contaminated from this source.

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That the surface slopes from the well toward these unhealthy surroundings is far from proof positive that the liquor from these does not flow into our wells. There is very liable to be a substratum on which the filth may readily flow and contaminate our wells. The germs of typhoid fever have been traced a half mile to the source of pollution. People, then, who use water from surface wells are in constant danger of being poisoned by the impurities that are so abundantly deposited in the privy vaults and cess-pools that pollute the soils drained into their wells.

Color test: Fill a clean, long bottle made of colorless glass with the water; look through it at some black object; the liquid should appear perfectly clear and free from all suspended matter. A turbid or muddy appearance indicates the presence of soluble organic matter or solids in suspension.

Odor test: Empty out part of the water, leaving the bottle half full, cork and leave for a few hours in a warm place. Shake the bottle and remove the cork and critically smell the air contained in the bottle above the water. If it has any odor, especially if the odor be the least repulsive, the water is unsafe for use. Boiling water sometimes evolves an odor that otherwise does not appear.

Taste test: Water fresh from the well is usually tasteless, even though it contain some putrescible organic matter. Water for drinking purposes should be and remain tasteless, even after it has been warmed, since warming often developes a taste in water which is tasteless when cold. If water has a repulsive or even disagreeable taste it should be rejected.

Another simple water test is Heisch's, which is made with sugar: Into a perfectly clean pint bottle, put five or six ounces of the water to be tested, to which add ten or twelve grains of pure granulated sugar, tightly cork and set in a window exposed to the light, but not to the direct rays of the sun. The room should be moderately warm, say at a temperature of 70° F. If in twenty-four or forty-eight hours the water becomes cloudy or milky it is unfit for use.

After a few days if the water be very bad, upon removing the cork it will emit the odor of rancid butter. The little specks settle to the bottom of the bottle, where they appear as white flocculent masses. This test does not always decide the question as to the purity of water, for while cloudiness in the water certainly indicates unfitness for use, a negative result does not *prove* the water to be good, as the test often fails to indicate organic matter really present if phosphate be absent.

Hager's test is a simple one and is made in the following manner: Pour into a half pint of the water to be tested a tablespoonful of clear solution of tannin (a heaped teaspoonful of tannin to a gill of rain

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water). If no turbidity occurs within five hours the water is good; if turbidity occurs within one hour the water is decidely unwholesome.

If there is the least suspicion that a water supply is impure from inflow of sewage or surface drainage, it should not be used until it has been *boiled* or *filtered*.

Boiling water for half an hour destroys all germs of disease and renders it safe for use. It is well to filter it afterwards, however, as it is thus ærated and made more agreeable as drinking water.

A simple and practical filter can be made from a bottle: Take a long-neck bottle; crack off the bottom by tying a string saturated with turpentine around the bottle at the point to be broken and set fire to the string and the bottle will be ready for use. Place in the bottle a layer of cotton; the cotton should be worked in water, preferably warm water, in order to remove the air. Drop a wad of cotton into the neck of the bottle so that the mouth will be covered; the layer of cotton should be from two to three inches in thickness. This should be well pressed down, not too tightly, else it might filter too slowly, neither too lightly, or the water may form channels and thus prevent its being filtered. When the filter becomes clogged it can be cleaned by boiling and rinsing, or perhaps it is as well to replace it with new.

A sheet of filtering paper such as is used by druggists, and a glass or tin funnel, will furnish a good means for filtering water on a small scale. A fresh sheet of paper should be used every day.

The most reliable filter for general use is the "Pasteur Filter."

We judge somewhat as to the wholesomness of water by its taste, smell and color.

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A FEW OBSERVATIONS UPON PUERPERAL SEPTICÆMIA.

By H. R. Wilder, Swanton, Vt.

It seems that for nearly *twenty centuries* the cause of puerperal fever as taught by Hippocrates, Galen, and contemporaneous and subsequent teachers was from a suppressed lochia, and this was received almost without dispute. Strange as it may seem, the best clinical observers confounded a symptom with a cause. After 1,600 years had elapsed it was taught by Puzos that in the natural condition of the pregnant woman milk was circulating in the blood, and was attracted to the uterus during gestation, and after confinement to the breasts, and that metastases of the milk to other parts gave rise to the symptoms of a malignant or intermittent fever. Yet a hundred years later argument was advanced in support of this theory that they had found on opening the abdomen in women, who had died from an epidemic which had raged in Paris, a free lactescent fluid in the lower part of the abdominal cavity, and clotted milk adherent to the intestines. After 200 years more the true nature of abdominal effusion in women who had died in childbed, was demonstrated as being found in peritoneal inflammations occurring in men and non-puerperal women; and during the second half of the eighteenth century the effects began to be studied as a cause, i. e., that the local inflammations of womb, peritoneum, veins and lymphatics were looked to as a cause of this fever, and with the increased knowledge of pathological anatomy they began to look back again to the cause of these inflammations, and the near approach to the facts was reached by the observers who declared that it was an essential fever, and as distinct a disease as typhus or typhoid fever, not exactly accepted to-day, but we must admit that the conclusions arrived at by so eminent an author as Fordyce Barker, are entitled to weight, when he declares "that puerperal fever has no characteristic lesions; 2d, that the lesions which do exist are often not sufficient to influence the progress of the disease or to explain the cause of death; 3d, that there may be inflammation, even to an intense degree, of any of the organs in which the principal lesions of puerperal fever are found, and yet the disease will lack some of the essential characteristics of puerperal fever; 4th, that the lesions are essentially different from spontaneous or idiopathic inflammations of the tissues where these lesions are found; 5th, that puerperal fever is often communicated from one patient to another through the medium of a third party, and that this is not the fact in regard to simple inflammation in puerperal women."

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While these fine conclusions of Fordyce Barker may be correct in the main, it does not necessarily follow that the disease is due to an essential cause always the same. But it does seem that after *2,200 years* of speculation it has been the privilege of the last quarter century to announce the cause and prevention of puerperal fever. And, that it does depend upon *extrinsic influences* introduced into the system, not that the condition of the patient bears no part in the disease, for in truth, all diseases depend more or less, for their development and extent upon a special adaptation of the soil of the system, and that these outer influences are either the poisonous bacteria, or their products, infecting the system causing the local manifestations *secondarily*, and the bacteria and its products, together with the local lesions resulting therefrom, constitute the essential features of puerperal fever, or puerperal septicæmia.

Recent investigations tend to show that puerperal fever is really a surgical fever, modified however, by the puerperal state.

Points of introductions of these bacteria, or septic elements, are through lesions that are so commonly present in the parturient canal, although it is claimed the poison may be introduced through the respiratory and digestive organs, also. It is generally observed that the atmosphere, dietary and influence of drinking water, if impure, have a very unsalutary influence upon disease of any kind, and of course the condition of the blood in the puerperal state when it is taking up by absorption, and eliminating the effete products of the hyper-developed organs, and the sudden cessation of the draft from the blood of the nutrient elements that have hitherto gone to feed the fœtus, renders the system a fertile soil for this disease.

This is an infectious disease due, as a rule, to the septic inoculation of the wounds which result from separation of decidua and injury of genital canal. Puerperal septicæmia is characterized by the invariable presence in the organism of minute bodies called bacteria. We get in the tissues a multiplication of bacteria, and the consequent inflammation, which local inflammations, or reservoirs, are the source from which the toxic influences are received into the blood. We may have different degrees or extent of inflammation, and different degrees of septic poisoning, and the poison may be received from the decomposing retained coagula of blood, fragments of membrane, or placenta. That is, in the latter case the poison entering the blood by absorption may be by the pathogenic germs that have formed in these discharges, actually entering the blood, or by their ptomaines being absorbed. The absorption of the ptomaines is the cause of putrid intoxication, which may be the occasion of mild or severe symptoms. We have often observed the rapid disappearance of bad symptoms by the washing away of the decomposing and putrid matter from the uterine and vaginal cavity.

And now the fact is, we believe, well established that the symptoms

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of puerperal septicæmia are rarely met with now where the principles of asepsis and antisepsis are strictly carried out, and the great terror of the midwife now is not in the after treatment of the parturient woman, nor of the diseases resulting therefrom, but his anxiety is that he observe all the precautions against *causing* or *allowing* infection.

Because it is now well understood that the attendants are largely by their ignorance or carelessness, responsible directly or indirectly for the occurrence of the disease.

PREVENTIVE MEDICINE, WITH A STUDY OF THE INFECTIOUS DISEASES PREVALENT IN VERMONT.

By C. S. Caverly, Rutland, Vt.

I do not know that our experience in Vermont with infectious diseases has differed from that of other States in our latitude and with similar topography. But it has occurred to me that no definite study has been made of these diseases by our society, and I ask you to consider the status of Vermont as regards the prevalence of such diseases here, based on the most reliable data at hand, and what it behooves us, as modern medical men, to do in preventing them.

It may not be generally known that one of the earliest books on the subject of infectious diseases, was written by a member of this Society and published in Woodstock in 1815. "A Sketch of Epidemic Diseases in the State of Vermont," with a consideration of their causes, phenomena and treatment, by Jos. A. Gallup, M. D., was for years I am told, authority not only in Vermont but throughout the country. From this work I find that our forefathers' diseases were very much the same as ours, even to hydrophobia and the influenza. The words typhoid and typhus were used interchangeably and the fever was very prevalent. Measles and small pox were the two diseases most dreaded for their contagious properties. Canker-rash and malignant and ulcerous sore throat are mentioned as the same disease and are not considered contagious, while other diseases considered are, spotted fever, dysentery, croup and consumption. At a distance of 75 years, Dr. Gallup and his theories look primitive enough, but who shall say that our own now modern theories, in which hydrophobic inoculations, tuberculin injections and the elixir of life, play prominent parts, will not look even more ridiculous to our professional descendants.

In 1857 our State inaugurated a system of gathering vital statistics,

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which seeks to give the number of marriages, divorces, births and deaths yearly. These statistics are gathered as you are probably aware, by school district clerks, and are compiled and tabulated by the Secretary of State. I feel that an apology is due this Society for making use of them here, but since they are the only statistics on this subject which we have, I am compelled to use them, incomplete and inaccurate as they are. That they are incomplete and inaccurate, any casual observer can see, and all I claim for the figures I gather from them, is that they are approximately and relatively correct: that they may show approximately the number of deaths from certain diseases and consequently the prevalence of those diseases; and that the errors in the matter of one disease may possibly be offset by like errors in another, and thus their relative prevalence be substantially correct.

From these Registration Reports I have prepared charts showing the mortality year by year from most of our infectious diseases. These are so arranged that a glance will show the number of deaths recorded each year from each disease, and a hasty comparison can be made. The Report for one year (1881) is missing and a copy of it cannot be found. I have selected those diseases of well known infectious character, and against which as a profession, we are bound to adopt preventive measures, viz., small pox, measles, scarlet fever, diphtheria, typhoid fever and consumption.

Others, such as whooping-cough, cerebro-spinal meningitis and erysipelas, might properly be included, but I take only such as are now generally recognized as infectious and preventable, and at the same time important causes of mortality.

It will be seen at a glance that small-pox and measles do not figure conspicuously as destroyers of life: that deaths from scarlet fever, diphtheria and typhoid fever are very numerous, while consumption in nearly every year, maintains a commanding lead. The deaths from consumption during these 32 years, range from 650 to 850 yearly; from typhoid fever, from 100 to 550; from diphtheria as high as 1200 in a single year; from the others, a much smaller number.

The death rate from consumption has fallen off slightly during the past decade; that of typhoid fever has had a decided decline; and that from diphtheria, while subject to greater fluctuations, has not declined during the past 10 years.

Thus much for the relative mortality of these diseases. Their prevalence can be roughly computed from these figures and may be supposed to follow much the same curves. Studying the statistics in regard to consumption from another standpoint, I find that the death rate of the different counties does not vary markedly. During the period covered by these records, I find that there has been 2.7 deaths per 1000 of population in Caledonia Co., which has the largest percentage, and 1.9

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per 1000 in Grand Isle Co., which has the smallest. Orange and Washington are among those having the largest death rate from consumption, and Franklin, Essex and Addison those having the smallest. I do not know that any significance attaches to these figures, beyond perhaps the fact that there is a slight difference in favor of those counties bordering on Lake Champlain. Of the five counties bordering on this lake, I find that there have been 2.1 deaths per 1000 of population in the State as a whole. It would be interesting to note how these figures compare with other parts of the world, but reliable figures on the subject are scarce. In a paper by Dr. Bryce of Canada, I notice that for the period 1857 to 1887, the average rate per thousand in England was 1.97 with a steady decline from 2.67 in the former year to 1.59 in the latter. The figures for the State of Rhode Island during the past 35 years are 2.49 per thousand. The rate for Massachusetts in 1886 was 2.69, which was stated as the lowest for many years. The rate for New York State is 3.56; for rural New England, as a whole, 2.30; for Switzerland 1.80 (Aimee Raymond, Medical Record, Oct. 17, 1891.)

Of the 23.619 deaths, of which I find records during the past 32 years in Vermont, I find 3765 or 16 per cent were under 20 years of age; 5893 or 24 per cent between 20 and 30 years of age, and 3598 or 15 per cent between 30 and 40 years. Nearly ¼ the deaths from this disease occur between 20 and 30 years and more than ½ under 40 years.

Diphtheria, according to the death rate by months, shows the same characteristics as are observed elsewhere. The highest death rate is in cold weather, the lowest in warm. The distribution of this disease is perhaps more significant. There has been the greatest mortality from it in Caledonia Co., where there has been 1.1 death each year to each 1000 population, and Windam and Washington Counties come next in order, while the lowest fatality has been in Essex, Rutland and Franklin Counties. I find that the disease has been more fatal in the Eastern counties of the State than in the Western; by this difference, that while in the Eastern counties there has been .79 deaths per 1000 living population yearly, the figures for the Western are .72. As a whole, the Western part of the State is more thickly settled and has more populous centres than the Eastern. Perhaps this fact does not explain the difference in the fatalities from diphtheria, but it has lately been asserted on the authority of statistics, that diphtheria is essentially a disease of the farm and country. Dr. Longstaff, an English authority, has recently published figures that substantiate this view. The annual death rate from this disease in Rhode Island for the past 35 years has been .60 per 1000 living population. For Massachusetts in the year 1886, the figures were .80. This tends to show that our death rate in Vermont does not vary much from other New England states. Of 7428 recorded deaths in Vermont from this disease, 2808 or 37 per cent were under 5 years of

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age, and 1977 or 27 per cent were between the ages of 5 and 10 years; about two-thirds of the deaths were accordingly under 10 years.

The records in regard to typhoid fever, are less reliable than in regard to other diseases. In these records occur many deaths that are tabulated simply "Fever," "Typhus fever," "Infantile fever," "Bilious fever" and "Gastric fever," which may possibly properly be classed under the name "Typhoid." However, as the records classify them, I find that 5748 deaths during these 32 years, have been attributed to typhoid fever. 11 per cent or 609 of these occurred in the month of August; 18 per cent or 1082 in September; 19 per cent or 1121 in October, and 12 per cent or 770 in December. Of these 5748 deaths, 2085 or 36 per cent, were under 20 years of age and 1326 or 23 per cent were between 20 and 30 years. These figures require no comment as they represent about what is generally known as to the season at which the disease prevails and the age of those most likely to suffer.

The moral to be drawn from this tale of figures, might almost be pointed in these words. The precautions that have banished small-pox from the State; that have made deaths from measles and scarlatina rare, should if well understood by the public and acted upon by the profession, greatly reduce the prevalence and mortality from typhoid fever, diphtheria and consumption. Theoretically, such diseases as these should be wiped out of existence. The happy millennial future will count among its chief causes of happiness, the absence of these diseases. As members of the medical profession in an age that is becoming acquainted with their characteristics, we are fortunate in being able to contribute to this end.

The first and great duty that devolves on us, is to instruct the public. We do not need to tell a family that small-pox is "catching," nor do we that scarlet fever or measles are the same. We are able to carry out correspondingly strict precautions against their spread. The result is seen in the small death rate attributed to these diseases. With diphtheria and typhoid fever it is different. While many know and acknowledge their infectiousness and are willing to observe rules restricting their spread, still there is a vagueness and uncertainty in the minds of many that make it harder for physicians to enforce restrictive measures. The people should hear the simple explicit truth from us on every proper occasion. No suspicious case of sore throat should be allowed to go half-diagnosed and consequently half-treated. "Diphtheritic sore throat" and "croup" and simple "sore throat" are evasive, unprofessional synonyms often for diphtheria. We should be fearless and honest. We should be sure we err on the safe side. If there is room for a fair doubt, we ought to say so and give the patient's friends the benefit of the doubt. It is in this direction that we commit more errors as a pro-

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fession in dealing with these diseases probably, than in any other, and give them a fatal start. We hear physicians accused of being alarmists and raising a stir for advertising purposes. Perhaps there are such, but they are exceptions, and that accusation should not make the great body of the profession lethargic and careless. If we sit back in an over modest attitude, these diseases will continue to baffle our art. Undoubtedly one of the most dangerous cases of diphtheria, dangerous to the community, is the walking case. That the disease is often of so mild type as to allow its subject to frequent the streets and business places, there is little doubt and it should make us, and through us the public, careful of the most ordinary sore throat. Many of the so called isolated cases of Diphtheria have this origin.

Another common error is the ascribing of diphtheria and typhoid fever to simple filth. If the infectiousness of these diseases mean anything, it means that they do not arise de novo. We may with propriety advise against uncleanliness and dirt, but when we see an isolated case of fever or diphtheria, we should set the people to seeking for the preceding case. This is what we do in cases of small-pox, of scarlatina and of measles, and if isolated cases of these diseases occur, cases in which the prior case is sometimes hard to discover, why may not the same be true of diphtheria and of typhoid fever. The vehicle of the infection in these diseases is different; the germs are different and have different natural histories, but it is a definite, distinct and unique germ in each case, and each germ propagates itself and not another. Cabbages or corn will not spring up spontaneously in a barn yard, and I know of no reason why we should expect a crop of diphtheria there, unless it has been previously sown. That filth furnishes good breeding ground for these germs, no one doubts, but that it originates them is more than doubtful. The typhoid patient may have lived in a hog pen, but that fact does not explain his sickness. Everyone should know that the most probable cause is to be found in his drinking water and back of that the inevitable other case.

These facts are slowly becoming public property and as slowly is the spread of these diseases being limited. Isolation and disinfection should be our key-note in dealing with the case in hand. Thoroughness in both these particulars, distinguishes the modern medical man and marks the degree of our success in preventing these diseases.

In regard to consumption, on which the wisdom of the medical profession is now focused, prevention still retains its value over any cure, and until more successful results are obtained in the treatment of the disease than any yet substantiated, and as long as the disease retains its pre-eminent position as a destroyer of human life, we are justified in discussing methods of prevention. Koch has certainly furnished a clue to this end if tuberculin does not cure. Here is a field for missionary

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work that should enlist the united efforts of our profession. We should give forth no uncertain sound on this subject. Consumption is a germ disease; it is not inherited, i. e. we are not born with the disease, it is acquired. The predisposition to it is inherited, i. e. the proper soil for the growth of the germ may be handed down from generation to generation. The germs live in the discharges from the patient, in those from the nose, throat, lungs, kidneys and skin as well as in the stools. These germs may reach the unsuspected person whose body furnishes the "proper soil," by means of dust laden air, of eating utensils and in other ways that suggest themselves. These are well established facts and on this basis any physician can formulate preventive rules. It is a disease so essentially chronic, and one in which so many of its subjects are able to associate with the well, that preventive measures are doubly hard to enforce, but as in the cases of typhoid fever and diphtheria, we should make our campaign one of education. We should let it be known that the consumptive who attends school, who travels by public conveyances, who walks the street and frequents stores, who works in the shop and office, is dangerous to his associates. We should tell them that the sick room, with its furnishings and bed linen, is a source of danger to the attendants; that the sputum is alive with the germs and that handkerchiefs and cuspidors should be carefully disinfected. These and many others are precautions that as managers of the sick, we should always emphasize and repeat.

600 to 800 deaths per year in our State, largely among young men and women, is excuse enough for our making determined and united exertions in this direction. There is no doubt that the infectiousness of consumption has been too frequently lost sight of in our management of the disease, and it is time that as a profession we were more awake to this phase of the disease. Modern microscopic investigation has turned the minds of the medical profession into one main channel. It is only an exceptional disease that has not received attention, and the names of those which are being ascribed to microscopic organisms are fast multiplying. The names of Koch, Pasteur, Sternberg and many more have added vastly to the lustre of modern medicine, both in and out of the profession. Our positive knowledge of the workings of disease has been vastly increased. We now speak positively of the pathology of many diseases, the nature of which were hitherto only surmised. Antisepsis and asepsis, the logical outcome of bacterial investigation, have revolutionized surgical procedures. Surgical treatment has approached the point of being an exact science. The same cannot unfortunately be said of medical treatment. Considering the work that has been done in this direction by many skilled observers, our armamentarium for the cure of disease has received no additions worthy of mention. However sanguine we may be as to the results of future experiments, thus far the fruits

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have been disappointingly small. The quinine antidote to the malarial poison, the mercurial to the syphilitic and vaccine to variola, all antedate bacteriological pathology. With most diseases ascribed to bacterial agency, the improvement in our methods of cure remain as formerly, varied and unsettled. The antidotal cure of diseases, excepting only a very few like malaria, syphilis and small-pox, is still in the hands of experimenters. While we are compelled to acknowledge our poverty in this direction, bacteriological research has fortified us in another, and the profession can confidently claim the power to prevent what it cannot cure. The microbic theory of disease is the parent of preventive medicine. Preventive medicine has leaped into prominence during the past decade and has become an important branch of our art.

I am aware that my suggestions as to the prevention of diseases mentioned, lack originality, but I have aimed mainly to call attention to the relative fatality of the different diseases considered preventable, and to demonstrate their distribution and their prevalence among children and youth. I shall also feel that I have accomplished part of my purpose if I shall awaken some new interest in the prevention of those which are so evidently the most fatal in our State, viz., typhoid fever, diphtheria and consumption. Preventive science, in the cruder form in which our fathers knew it, waged war against those other diseases small-pox, scarlatina and measles, with what success we see by the statistics presented. That same science, reconstructed and perfected, is our weapon to-day against these and all others added to the list. We do not need to renounce as unworthy our notice that sneer sometimes expressed, that we cannot mean half we say about preventing disease, else we were working against our own interests. In this the medical profession nobly vindicates its title to the first rank of human callings. It places the interests of humanity above any selfish consideration, and labors with untiring energy and against the most discouraging obstacles for that end. Preventive medicine is the proudest achievement of a skillful and unselfish profession.

Permit me in closing to say a word in behalf of preventive medicine in our State, in behalf of the work of the State Board of Health. We are all well aware that this Society labored for years to secure this Board and to its labors largely it owes its existence. The efficiency of the Board depends, as you all must know, very largely upon the support which it receives from physicians. In the absence of any statute requiring prompt and accurate returns from physicians of cases of infectious disease, the Board of Health has sought to gather these statistics through the medium of local Health Officers. Most of the larger towns now have such officers, and the Board proposes to have them in every town in the State. If representatives are present at this meeting from any towns having no Health Officers, let me urge it upon such to secure the appointment for themselves or other reputable physicians.

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Health Officers are supplied with postal cards on which they are asked to report quarterly to the Secretary of the Board. These reports have been already gratifyingly large, still they are far from complete. Complaint is made that physicians are careless or indifferent or from personal animosity neglect to report their cases to Health Officers. I need hardly enter into any argument on the importance of these statistics or the advisability of collecting them in this way. They are required in most parts of the country by law. The Board of Health urges the importance of this matter upon the individual members of this society. Upon correct information of the presence and virulence of these diseases, must rest any effective measures for their prevention. I have sufficient confidence in the enterprise and intelligence of the mass of our medical men in Vermont, to suppose they will gladly do everything in their power to stamp them out, and I think I can promise that the State Board of Health will do all it can with the modest means at its disposal to further this end.

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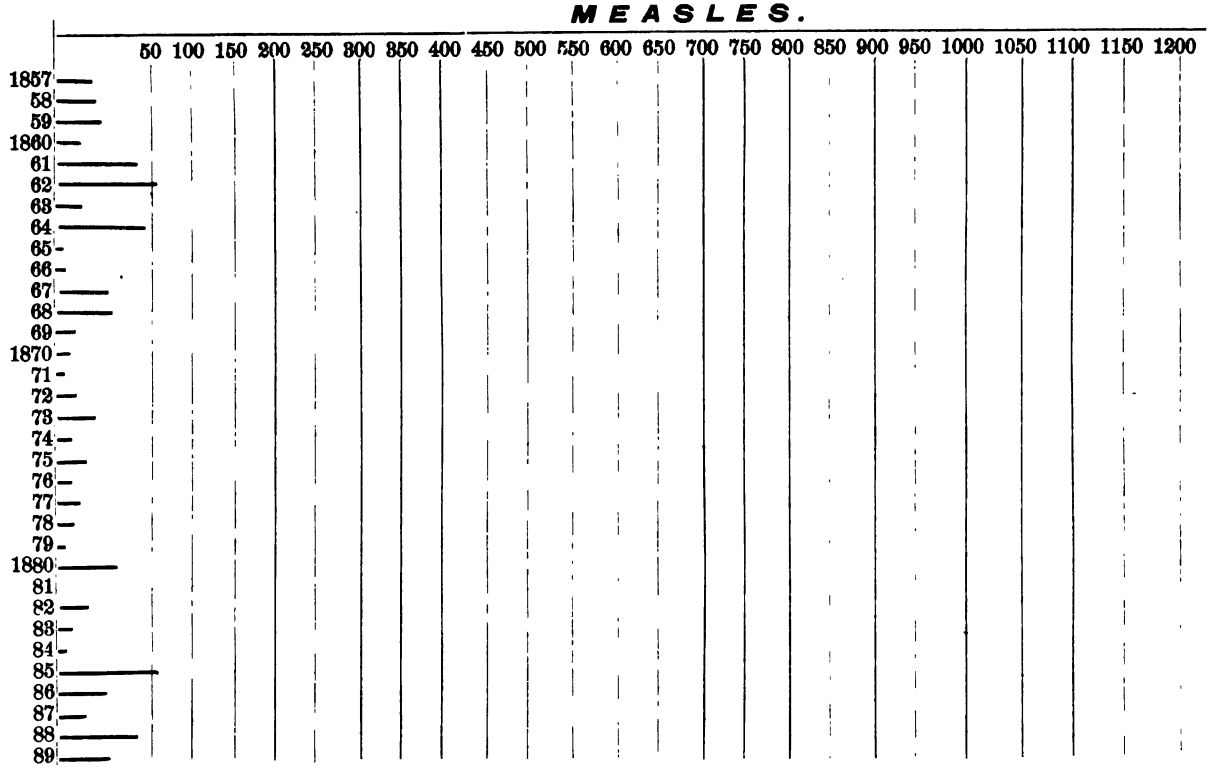

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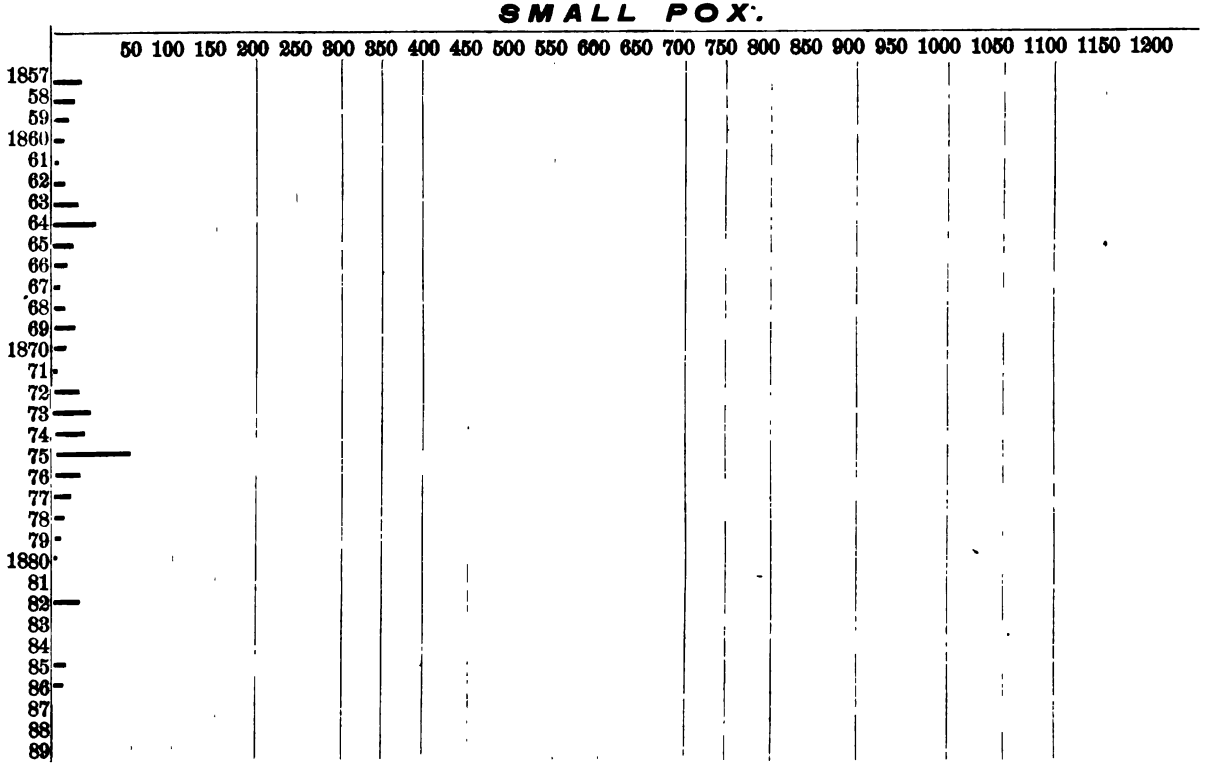

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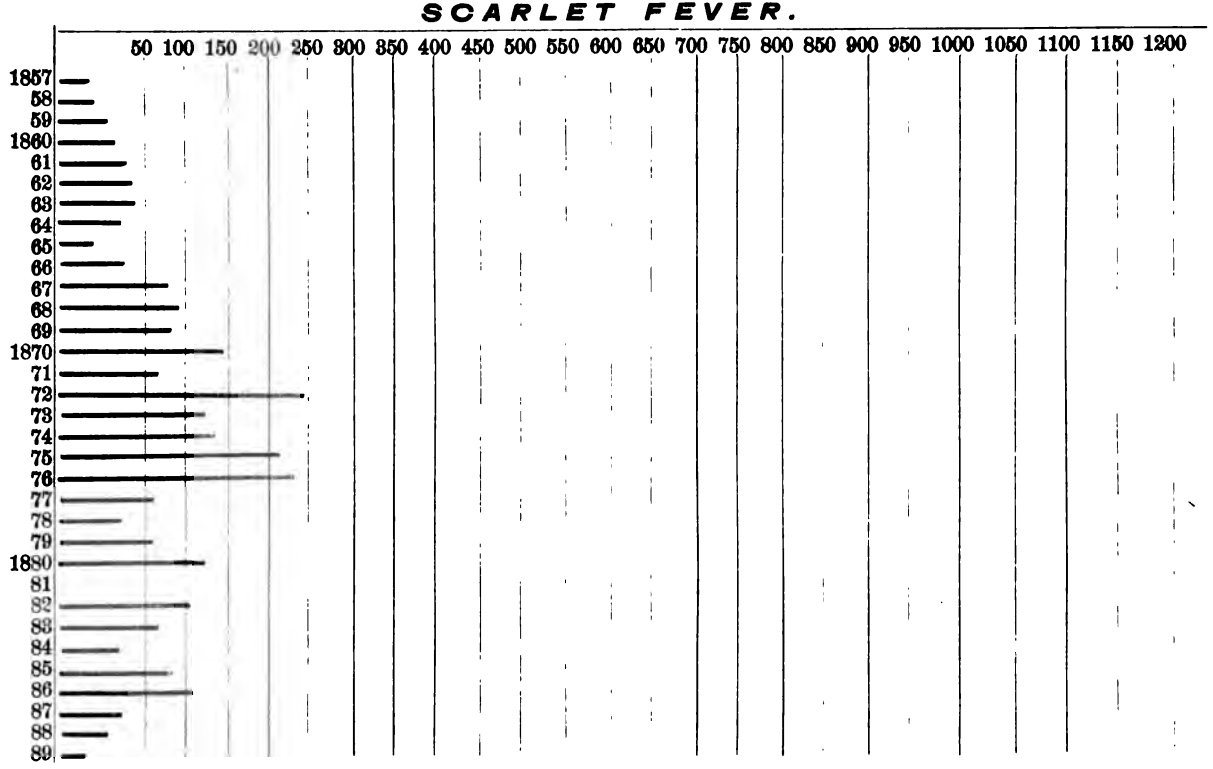

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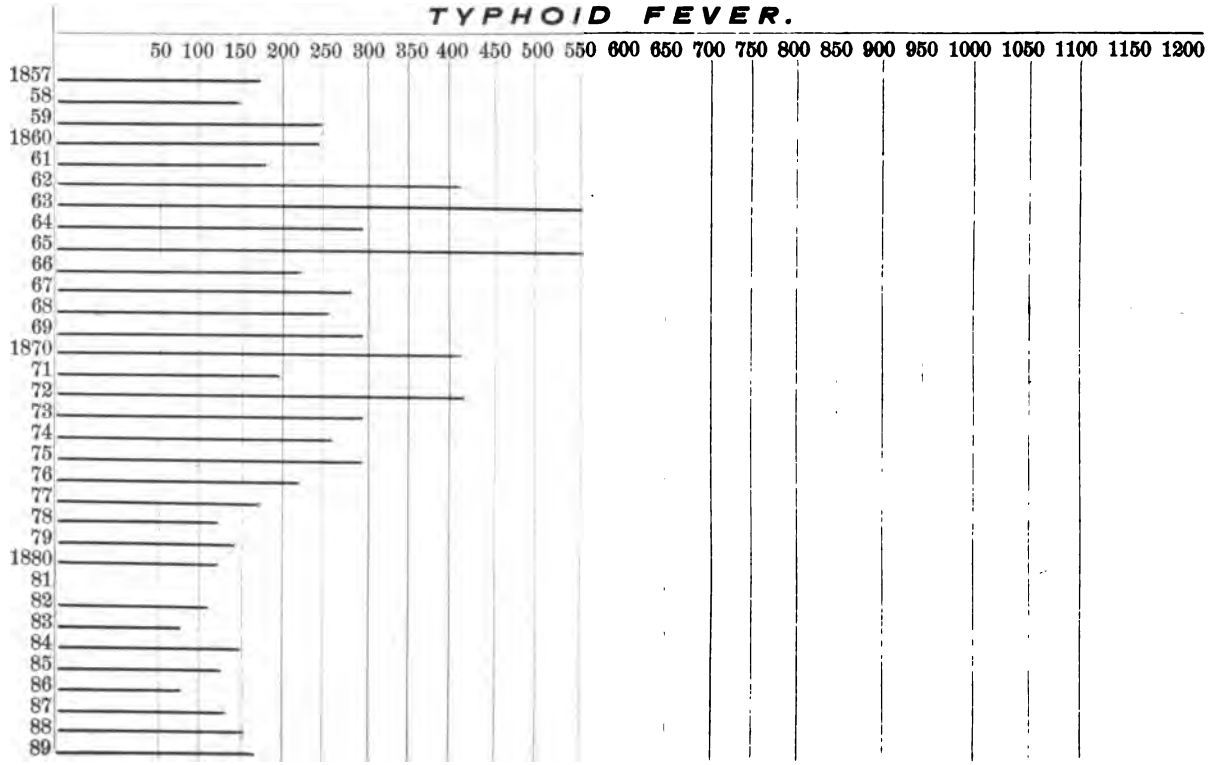

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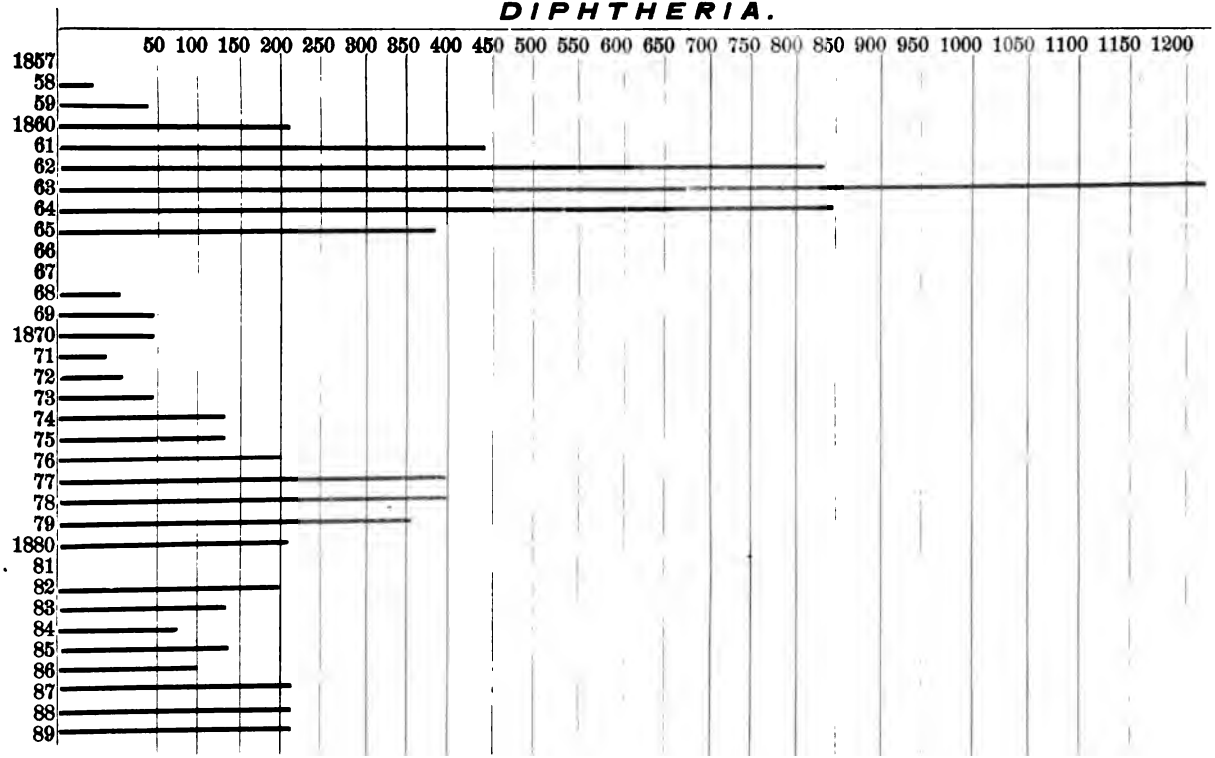

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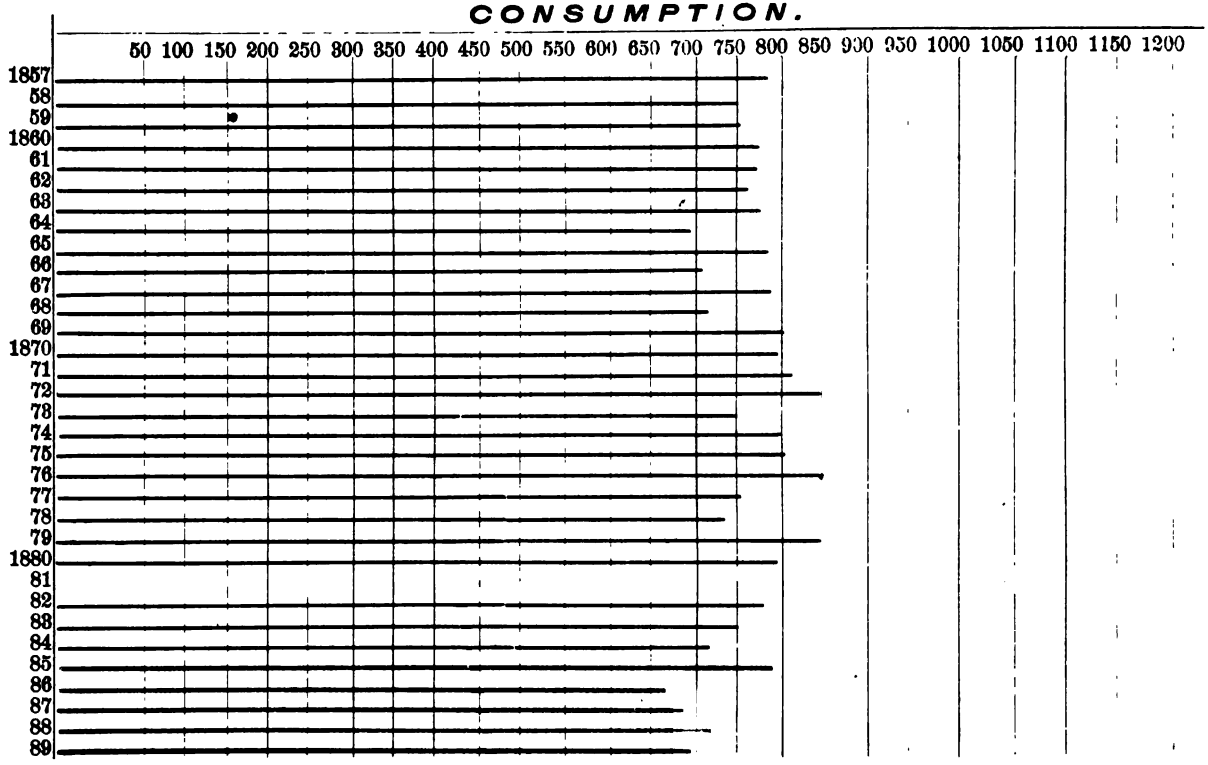

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SHOULD THE LECTURE SYSTEM IN OUR MEDICAL SCHOOLS BE ABOLISHED?

By O. W. Sherwin, M. D., Woodstock, Vt.

It is desirable that medical students should get as good fitting as possible within reasonable time and at reasonable expense. It is pretty well settled as to what constitutes a proper fitting for the student which shall entitle him to a license to practice. Some are better fitted than others; as with individuals everywhere, with like opportunities there will be much difference as to results.

In olden times as we know, the medical student rode with his preceptor and received instruction in the carriage and at the bedside and elsewhere as opportunity presented, and also read his preceptor's books if he had any. If a doctor became somewhat noted for his skill he might have several students at one time whom he was fitting for medical practice. Later, medical schools were started by two or more medical men combined to give instruction to classes by way of lectures and demonstrations.

For many years text books were few and each professor was virtually his own authority on matters pertaining to his branch. In time each reputable medical school had a lecturer on seven general divisions of medical science,—anatomy, physiology, chemistry, materia medica, practice, surgery and obstetrics. At that time it is possible and perhaps probable that most of the accumulated knowledge of the world was imparted to the student by means of lectures. The professors were usually leading men in the several branches of their profession and kept pace with advancement of science.

But in time men very naturally turned their minds in different directions and worked in special matters until it was no longer possible for the professor of theory and practice to keep up with the progress in his department.

Some, for instance, had been making special investigations in diseases of the eye. Others had been giving special attention to the structure, physiology, and diseases of the ear. Others had gone far ahead of the old professor in knowledge of the diseases of the nasal passages, throat, and larynx. Many others devoted their whole time to diseases of the chest. Others had been working out the knotty problems of the nervous system, and so on, and so forth, and the professor was soon aware that he was no longer authority on many of the subdivisions

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of his branch, but was able to give only a summary of the discoveries of others, supplemented by such knowledge of his own as he might have gained in his practice.

Everybody was working at something,—everybody was learning something,—some faster, some slower. It was desirable for everybody to gain all the knowledge possible, and students must learn,—they must learn many things, they must learn them quickly,—and generally as economically as possible. Men were obtained who could give instruction in the different specialties and thus the original number of lecturers was multiplied by 2, 4, 6, 8, 10, etc., ad infinitum.

In order to fill the one chair of practice it became necessary to have in addition to the original professor, a professor of diseases of the eye, another for the nose, throat, etc., another for diseases of the chest, another for diseases of the nervous system, another for diseases of the urinary organs, another for diseases of the skin, etc., etc.

The old fashioned professor of obstetrics and diseases of women and children no longer exists. His place is filled by lecturers on obstetrics proper, also those on diseases of children, gynæcology, orthopedic surgery, etc., etc. So it is with the other departments. Many of the professors are specialists in the department they teach.

We come to the question as to whether the old lecture system in our medical colleges is the method that will best prepare the student to meet the demands of the times?

What are those demands? They are in words about the same as ever, but really increase with the real progress of the science. The demands are that the student at graduation shall know how to properly use his senses and judgment in the diagnosis and treatment of diseases, fortified by such an amount of knowledge of the several departments of his profession as shall render it probable that he will be able to do good rather than harm to patients who may chance to apply to him for relief. It is not demanded that he shall be a specialist in any department. It is not demanded that his medical education shall be complete at the time of graduation.

If we are to make choice between the lecture system and the recitation system, which shall we take? In my opinion the recitation system offers many advantages over the old system, and that with the present tendencies of the latter the time is not far distant when our medical colleges will make a radical change.

Let us for a moment consider some of the advantages of the recitation system. Perhaps the most important process in the acquisition of knowledge is repetition. Without repetition or review it is not possible to make much progress in learning. This review may be either voluntary or involuntary. If we read an article which sufficiently impresses our minds, which sufficiently interests us, perhaps it will occupy our

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minds for a long time,—we will continue to think of it,—it will be present with us whether we desire it or not, and so we will involuntarily review it until it becomes a part of ourselves and we never forget it. On the other hand there may be many things which we ought to know,—which are of vital importance for us to learn, and yet, at that time not sufficiently striking or interesting to take our attention in a degree so as to remain with us. And so the only way we can acquire knowledge of that sort will be to force ourselves to frequent review until we shall fix it permanently in the memory. Now in learning by lectures we must depend on our memories and note books for review. Memory is treacherous and it is very difficult to take notes and understand the speaker at the same time. Much is lost, whereas if the text book is before the student he has at hand a certain means of review at all times. This review brings out the salient points and serves to permanently fix in his mind the subject, and what is of no small value, the student thereby acquires a habit of mental work which is of the greatest practical value in after life, and which he will hardly get if he depends on the lecture system for his training. Huxley said that "perhaps the most practical result of all our education is the ability we acquire to do whatever we have to do when it ought to be done whether we like it or not." This is what a college does for a man.

There is where the student acquires this habit. To be sure he can if he will, acquire it elsewhere, but in college he *must* get it. This is one of the chief advantages of college discipline. It can be turned to practical account in our medical colleges. Everybody who has made any progress in knowledge has learned the one important fact, that to learn anything so as to keep it he must learn it many times. There is truly no royal road to learning, and perhaps Dr. Frost was not far from correct when he said the average man has to learn a thing twenty times before he knows it.

So it seems to me that before the medical student has made any considerable proficiency in medical knowledge there must have been much study, much repetition, and much thinking.

Now if this result can best be reached by the student sitting and listening to lectures during two or three terms, well and good. The men they listen to have got their knowledge in the slower painstaking way that I have been speaking of, or by some equally laborious process. It appears that the lecture system as a leading method, is not adopted in any other educational institution than the medical college. In other institutions the student is required to learn his lesson and attend recitations. It was early ascertained that a critical knowledge of any subject could be gained in no other manner. While lecturers are occasionally introduced as a means of instruction, I think the recitation system prevails all over the civilized world with the exception of the medical schools, and no demand has been made for a change.

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There are drawbacks to any system. Prof. Samuel D. Gross who was the prince among teachers, as he was also among lecturers, said that the two qualities, a good teacher and a good speaker, were rare to find in any one medical man. This is doubtless so. A man may be a first class teacher and may also be a very bad lecturer. He may also be a very entertaining speaker and his lectures be so wanting in method and precision as to render him a very poor teacher. The recitation system would doubtless bring together more good teachers in one school than under the present system. It might somewhat diminish the whole number of teachers, and I think that would be desirable, especially in some of the city schools. In some, for instance, we have two professors of surgery, and a professor or two of clinical surgery and two or three adjunct professors for each, and perhaps several lecturers in different departments of surgery,—so that to give the student sufficient surgical knowledge to graduate, the services of a large number of men is required.

Now with all due respect to the specialist, and with a due appreciation of the benefits we derive from his work, I cannot believe it is for the best interest of the medical student to take lectures on special subjects during the regular course.

The regular course of the study of medicine is to make general practitioners and not specialists. In many of the schools these short terms of two or three weeks or even less, have a wrong effect on the student's standing at the final examination. For instance, the professor of gynæcology perhaps will lecture only two or three weeks, and at the close of his term will examine and mark the standing of the members of the class, and his lectures being fresh in the minds of the students they will get a very high marking, which will affect the general average so as to greatly help out, which should not be the case. The professor of diseases of the nervous system gives a dozen lectures and goes away leaving the class marked high in his department.

Again the tendency of the special lecturer is to get beyond the student's reach. As a general thing they do not confine themselves closely enough to the elementary principles of their specialty. So far as I have been able to learn, their courses are much better suited to the post graduate than to the regular course. The lecturer on diseases of the nervous system will teach all about the reactions of degenerations, the pupillary reflexes and cerebral localization, but will leave the student in the dark as to what he shall do with a case of hysteria, otherwise than perhaps local faradization or general galvanization, neither of which one in twenty of the students will be able to apply in the early part of his practice. The professor of diseases of the nose and throat will teach all about the use of the galvano cautery in the treatment of hypertrophic nasal catarrh, and while it may be the best treatment in the world, not

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one in twenty will be able to properly use it, and if he is in general practice, not one patient in one hundred will allow him to use it during the first five years of practice. The young doctor will be obliged to go back to the old professor of theory and practice to find out how to treat such cases until he has been in practice a few years and get the confidence of his patients.

The attempt is made to teach students to do what they are not yet prepared to do,—I know a young doctor just home from a special course on the eye, who explained to his first patient with suppuration of the lachrymal sac, the necessity of probing the nasal duct, and that it was a very easy operation,—but when he came to try it he failed to find the duct and gave up in despair, while the patient concluded by the doctor's manipulations that the duct went upward towards the forehead. All the trouble was the doctor had learned to do the operation before learning the anatomy of the parts.

That semi-swindle, the private quiz of our professors, shows the value of the recitation system. Every student who has attended the private quizzes knows that he gains more knowledge of the subject in a quiz than he does in a lecture.

Perhaps semi-swindle is a pretty strong name, but it amounts to about that. This is one of the perquisites of the lecture system. A medical school advertises to receive students and to issue tickets for the full course for a certain sum, and the student finds that in order to get that instruction he must pay an extra five or ten dollars for private quizzes by any or all the professors, and a like fee for a private course in physical diagnosis, another for instruction in urinary analysis, another for learning to use the microscope, another for demonstrator's ticket, etc., etc., etc., until the whole fees are double the advertised amount—so on the whole semi-swindle is not far from the correct term as long as he is led to expect the whole for one fee.

Not the least among the arguments in favor of the recitation system is the leveling process, the measuring heads, the learning to know one's own powers. The freshman enters college with a much higher notion of his ability and consequence than he retains at the time of his graduation. The daily head measuring process tends to give him a just estimate of his own powers, and exerts a favorable influence on his judgment.

With the medical student it is sometimes necessary to receive this education after he graduates, if indeed he ever makes any considerable progress in his profession.

I do not wish to be understood that the lecture system tends to make all students superficial or "big-headed," but it certainly tends to develop rather than cure the trouble when it is in the incipient stage or congenital. Probably a large majority of those who graduate under the

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present system spend sufficient time in study to effect a permanent cure, but we could easily make a clean sweep under the recitation system. Years ago roguish farmers took to blowing up their calves for market. They would make a small hole in the skin of poor calf and insert a quill and fill the subcutaneous connective tissue with air, giving an exceedingly plump look to the animal. The buyer soon learned not to depend on the looks, but to put his hand on the specimen and thus easily detect fraud. It is so with the blown up graduate, we have only to gently feel of him to make our diagnosis as to whether his substance is really his own or whether it is in part the breath of his professor under his skin.

Some of our leading schools have taken a step in the right direction by holding recitation terms. I think all those who are teachers in these recitation terms will agree with me that the student's time is better employed thus than in the regular terms, and that their progress in medical science is more rapid and more to the purpose. But the number who can attend these terms is small compared with the whole number who study medicine, and will continue to be so as long as it is required to sit in lectures a certain number of terms before graduating. Even if the standard requirements for graduation were considerably raised from the present,—if it was understood that a student could receive his diploma when he should be able to pass a certain examination—if what he could know, instead of what he must hear, would count, I think our recitation terms would be crowded and the lecture classes small.

In some of our schools the clinical lectures take up considerable time. In large institutions it is difficult to so arrange clinics as to be valuable to the undergraduates.

Of course clinics in physical diagnosis and minor surgery are valuable, but however interesting it may be to the class to sit through an operation for ovariotomy or lithotomy, it is time which might be better taken up in other matters, for however much he may sit and look on to these operations, he will never be able to do them unless he takes special training for the purpose. If he can learn how to make a diagnosis certain enough to send his patients to the specialists, that is all that is required of him during his earlier years of practice.

I would like to say more, but perhaps have said enough unless I say it better. In speaking in favor of the recitation system, of course I mean that it shall be the leading feature, not that it shall be exclusively recitations, for such aid as can be given to a class by remarks by the teachers, or any clinical lecturers appropriate to the course, will of course be only a good feature of the system. What I claim for the system is, 1st, that it will turn out more good physicians to begin with,—that is, a larger number will be better prepared for their work when they graduate. 2d, it will be less expensive than under the old system. Let the young doctor be fairly prepared to do his work and above all things be

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prepared to study all through life. Leave the special lectures for the post graduate courses, and let them be well attended by the practising physicians. Try to graduate doctors as general practitioners instead of specialists, and any special study they wish to pursue, let it be post graduate.

I make the following extract from an editorial in the New York Medical Record for Oct. 8, 1891. "We have already called attention to the fact that the days of the old fashioned didactic lectures are numbered, * * * * demonstrations in various departments must always survive, as well as certain didactic forms of imparting knowledge, but the old time medical student whose years in college represent only two or three hundred lectures, and a few scores of well-filled note books will soon be a thing of the past."

THE PRESENT STATUS OF THE TUBERCULIN TREATMENT OF TUBERCULOSIS.

By Dr. J. H. Linsley of New York

There are two great reasons which caused the intense excitement over the announcement of a remedy that would cure tuberculosis. First, the great demand for a remedy to be applied to the cure of one of the most fatal scourges known to human-kind. Second, the entire confidence reposed in Koch by the medical profession.

On March 24th, 1882, Prof. Robert Koch announced the discovery of the cause of tuberculosis: viz., the tubercle bacillus. The truth of this discovery has never been successfully disputed. Some time afterwards, Koch began a careful investigation in the direction of discovering a remedy which would destroy this germ when inoculated into the body of man. He had ample ground for believing that he would be successful in his efforts. Bacteriologists well know that more or less antagonism exists between various pathogenic bacteria and between these and non-pathogenic germs. For instance, if we inject two rabbits with a pure culture of anthrax bacilli, ordinarily both animals will succumb in from twenty-four to forty-eight hours. If one of these animals, a few hours after the inoculation with anthrax, be inoculated with either a pure culture of erysipelas cocci, bacilli of green pus (bacillus pyocyaneous) (both of these being very virulent germs), or a perfectly innocuous

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species of bacteria, the red yeast germ, or micrococcus prodigiosus, the rabbit so inoculated will not die of anthrax. Other instances might be cited of a like antagonistic action between bacteria, but the one I have just given is sufficient to illustrate the point desired. When the announcement was made by Koch of his discovery, his labors were far from being completed, and it was only in obedience to the command of the German Kaiser that he gave to the world the results of his work in this direction at the meeting of the Tenth International Medical Congress in Berlin in 1890. It was entirely against his wish that his work be published before it had stood the test of a longer experience. We all know that the use of tuberculin has on the whole been unsatisfactory. We went wild over it on this side of the Atlantic, and upon its not fulfilling all claims advanced for it, we dropped it like a hot cake. I am sorry to say this manner of proceeding is especially characteristic of the American nation. While I am free to confess to a disappointment in the results of its use, I have still great confidence in its future. In Berlin to-day, confidence in the efficacy of tuberculin is gradually being restored, and it is in use in more than one hospital in that city. It is not on the market. It is also being used in several hospitals in our large cities, and a trial is proposed covering a period of from two to three years in which to test its action. As regards the nature of the lymph itself, we know that it is a glycerine extract of a pure culture of the tubercle bacillus, grown on a mixture of agar-agar, glycerine and peptonized beef broth. The strength, while at present unknown to the profession, is determined by experiments upon guinea pigs. Tuberculin is not valuable in chronic pulmonary tuberculosis. It is applicable in the early stages of this difficulty, and in many forms of tubercular joint affections, and external tubercular manifestations, as, for instance, lupus. Among the seventy odd cases treated by this method at the Post-Graduate Hospital in New York, several having incipient phthisis gained flesh to a surprising degree, and in some cases where cavities existed and numerous mucous rales were abundant, they became in a measure cicatrized, and the rales disappeared or very greatly diminished. We may to-day sum up the standing of the tuberculin treatment of tuberculosis in these words: As a rule, the profession, especially in the country, has lost nearly all faith in it, and it will probably require something more than the statement of a Koch to restore the confidence in the efficacy of the remedy at first possessed by the profession. The tuberculin should never be used except by an expert in this treatment, and for the simple reasons that the complications and symptoms arising from its use are so unlooked for and so oftentimes unusual, as to completely puzzle the physician who is without experience in the use of this remedy.

What is the action of tuberculin in tuberculosis? This is a difficult question to answer. It has been pretty generally thought that its action

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was directed particularly against the tissue produced by the irritation of the secretions of the tubercle bacilli. As a matter of fact, a section of such tissue removed after treatment with the lymph shows no structural change under the microscope and it is hard to account for the active changes that undoubtedly do take place in such tissues. The process has been called an acute necrosis, and the microscopic appearance would tend to prove this, while, as I say, the microscopic appearance is negative. Certain it is that after the use of tuberculin the bacilli present in the tissue are more or less set free. It is unnecessary to dwell on the danger in the use of the lymph in chronic pulmonary tuberculosis as pointed out by Virchow, viz., the production of acute general miliary tuberculosis as the result of the setting free of tubercle bacilli on account of the action of tuberculin.

In referring to some points stated by Dr. Bingham in his paper of yesterday, in regard to the immunity possessed by some persons as to poisoning by bacteria, Dr. Linsley called attention to the two theories at present set forth to account for immunity. First, the brilliant and ingenious theory of Metschnikoff, which attributes to the white blood cells, or leucocytes, the power of devouring bacteria and conveying them to different organs of the body whence they are discharged as effete matter. This is the so-called phagocytic theory. While the views of Metschnikoff (who, by the way, is now first assistant of Pasteur in Paris) have many adherents, they have a few fallacies. If we inoculate certain animals with a culture of bacteria, which are ordinarily fatal to the animal, we will find that they do succumb to the pathogenic action of the bacteria, but the white cells of the blood under the microscope are still seen to be filled with the bodies of these bacteria exactly as in the animals which are rendered immune by the supposed phagocytic action of the cells. This has been the hardest point for the followers of Metschnikoff to explain. On the other hand, Koch, Fraenkel, Loffler, and many others maintain that it is to the chemical reaction of the blood serum that the germicidal action of the blood is due. In those animals which show an immunity to the action of bacteria, the reaction of the blood serum is seen to be acid. This view is rendered all the more probable by the fact that very few pathogenic germs known will flourish in a medium having an acid reaction.

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THE UPPER AIR-PASSAGES AND THEIR DISEASES.

By O. B. Douglas, M. D., of New York.

If we attempt to analyze human life we discover its complexity and vastness. The science that would comprehend it in its origin, continuance, and end is of necessity broad and deep. It must name and record all physical parts, must observe their functions and relations to other parts, note their normal and abnormal conditions, know the means for preventing impairment and for restoring health. It must explain the relations of mind, memory, and to the physical, must survey the invisible border-line of sanity, sleep, and death, and mark with exactness their limits.

As exponents of this science—that comprehends every other science—we are expected to disentangle with certainty and celerity many of its mysteries; to discover the causes and cures of all maladies, and be always ready to apply the proper remedy; to stand ever on guard ready to protect the health of individuals and of communities. At times we are made to realize that no intelligence below that which created human life can understand it, and we are overwhelmed by a realization of the responsibility we have assumed. But the world—and the science of medicine—progress, and we are in the grand struggle to advance. No man ever did better than we may do.

Practically, how can we best succeed? How can we know and do that which others are doing at their best? We shall never attain much beyond our aspirations. With the purpose comes the strength. We have to learn from those who give their concentrated attention to special branches, and gather the results of their experience.

All physicians cannot be specialists, the opportunity does not come to them to study a large number of similar cases. But in densely peopled sections—our large cities—it is difficult to prevent specialism. A successful treatment of what the patient considers a serious case, is sure to be spoken of among his friends, resulting in a new crop of patients with similar troubles. And, struggle as one may against it, he wakens to the fact that he is a specialist, treating largely a certain class of cases, the tendency being ever to narrow the field of operations and the operator. Good men struggle against this tendency, and learning something from each specialist—and much from them all—grow broad and mighty in mind and practice. They show their wisdom not in studying special departments less, but in studying all departments more.

I have the honor to speak to you upon a subject to which I have

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been compelled—by force of circumstances and my own volition—to give much attention. The upper air-passages and their diseases I believe to be well worth your careful consideration, and justly demand more study than has been given to them. If I urge this with earnestness it is to impress its importance—as the sharp stroke of a hammer is more effective than its simple weight. And when I declare diseased conditions of the nose and throat cause more suffering—directly and remotely—than those of any other organ in the human body, I express what I firmly believe to be true, and indicate the relative importance of a knowledge of these parts and their diseases.

Catarrh, so-called, is more universally prevalent than any other disease which afflicts the human family. It is more persistent in its course from bad to worse, involves more vital parts, affects remotely more important organs, and is more destructive to the achievements of life than any other disease—absorbing vital force when it does not destroy, and blighting where it may not consume. That, in a large proportion of cases, it can be cured, is no longer a problem to be solved. Catarrh is an effect of causes that may be removed. Charlatans, discovering our inactivity, have rushed in to possess this veritable Eldorada, realizing larger returns for their enterprise in this direction than for any and all other ventures.

In the medical, as in the commercial, world, success crowns the man who is ready to supply a large demand. Quick sales and small profits bring, in the aggregate, larger wealth than slow sales and large profits. If we can quickly relieve woes common to the masses we may win success; and this not in a pecuniary sense alone, for the true lover of his fellow-men seeks to do the greatest good to the greatest number with least delay.

If we are justly impressed with the importance of this branch of medical science, we shall find its study neither dull nor uninteresting. The anatomy, physiology, and histology of the nose and accessory sinuses, the mouth, fauces, pharynx, larynx, and lungs, the eyes, ears, and brain, will afford an ample field for investigation, while the pathology, therapeutics, and surgery give large opportunity for practical work. Material is always abundant; our hands need never be idle. The recompense is reasonably sure, that better part—the consciousness of giving great relief to the suffering—which constitutes the major portion of every physician's compensation, is adequate.

Success in treating diseases of the upper air-passages—like success in other work—is the product of skill; but skill is largely acquired, and comes from experience; hence the need of application, of improving every opportunity for making a personal examination of noses and throats.

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We should know the dangers to which these organs are exposed, their diseases, and necessities. We should learn to detect their assailants, to diagnosticate their pathological conditions, to differentiate the simple and complex, the benign and malignant; to decide what conditions should be soothed, what stimulated, what constringed; when medicines will cure and when surgery is required; what drugs are best, what operations needed—whether ablation, abscission, evulsion, or cauterization—and by what method. We should possess the best instruments and learn how to use them. Thus we will add dexterity to knowledge, and to science art.

We are living in an age of investigation, the etiological period of the world. Men challenge theories. Antiquated methods are criticised; that which bears the sacred seal of classic age is not exempt from prying eyes and polished shafts of sceptics. Ignorance is no longer a subterfuge of safety.

It is not necessary that we should consider at this time the anatomy of the upper air-tract, further than to observe its intimate connection with other organs. By continuity of tissue the nose is related to the maxillary, ethmoidal, sphenoidal, and frontal sinus; through the cribriform plate of the ethmoid to the brain and meninges; by way of the lachrymal canals to the eyes; by the Eustachian tubes to the ears; by the pharynx, to the base of the tongue, the larynx, trachea, and lungs; by the œsophagus to the stomach; by the fauces to the mouth. The character of these various tissues, the mucous membrane, the vascular system, and the nerve-supply of the nose are interesting and profitable, and should be carefully studied. A want of time prevents our reviewing them here. The physiology and functions, the uses and abuses of the nose might well take more than all our time to-day. We may glance at the pathology, the therapeutics, and surgery, and consider briefly the causes, course, and cure of diseases of the upper air-passages.

What diseases most frequently attack these important organs? They are exanthematous, diphtheritic, tubercular, syphilitic, carcinomatous, scrofulous, erysipelatous, and inflammations resulting from irritants inhaled or ingested, traumatism, hypertrophies, and foreign bodies.

Catarrh is a secondary effect of these various causes, and is associated with hyperæmia, hyperæsthesia, and hypersecretion. Sneezing, coughing, obstructed respiration, pain at the bridge of the nose, superior maxillary and supra-orbital regions, through the eyes, ears, temples, and back of the head, are some of its symptoms or results.

Traumatic causes of catarrh are much more numerous than all other causes combined. I do not mean the immediate result of injury, but its more remote effects, discoverable after a lapse of years as deflected septa, exostoses, and ecchondromata.

The immediate effect of the diseases named are local and general.

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Their effect upon the general system must be carefully watched and combatted. The patient must be treated, not simply his disease. We cannot enumerate here the effects which these diseases exert upon the general economy, nor discuss the question whether they are the primary lesions, or the local expression of general lesions. We know the attack is made somewhere, upon some part first, and I see no reason for doubting that the germs of scarlet fever, diphtheria, tuberculosis, and many other diseases may be received into and locate upon the most exposed of all parts of the body, notwithstanding nature's extraordinary effort to fortify the nose and throat against such attacks.

The local effects are manifested by an increased flow, often mucopurulent, from the nose, anteriorly and into the throat, by pharyngitis, uvulitis, tonsillitis, laryngitis, bronchitis, and gastritis; by mouth-breathing, asthma, hay-fever, and hoarseness; by ringing and other noises in the head, by partial or complete deafness, inflamed eyes, nasal voice, anosmia, and impaired functions generally.

Of the universality of these diseases and their dire effects, we note: they prevail from Maine to California, throughout all climates, at all seasons, among all people, through all classes, at all ages, and every generation.

The persistency of chronic catarrh is proverbial. Like lepra, it is reputed incurable. It has baffled the sages, mocked at assailants, defied the schools, laughed at "pathies," and held its sway. "Faith-cures" have failed as signally as execrations of the damned.

Like all persistent ills, it has had "remedies" innumerable. Snuffs, sprays, gargles, ointments, washes, swabbings, probings, powders, inhalants, blood-purifiers, respirators, inspirators, and finally expirators. Failures have been almost as numerous as attempts to cure catarrh. In my experience at the Throat Department of Manhattan Eye and Ear Hospital, since 1877, many pet plans and proposed methods for curing this condition have been distorted by practical tests and common sense, till their gnarled features are hardly recognizable. Yet, positive and wonderful progress has been made, and there is a survival of very excellent methods. The interest felt by our profession in this branch of the science has increased greatly in the last dozen years. From an ignored and almost unknown work of a few years ago, it is now justly attracting thoughtful men. I was impressed with this fact a few months ago, when, wishing to know what had been written for the Medical Society of the State of New York, I examined its published Transactions from the organization in 1807 to the present year, and was surprised to find no reference to these diseases during the first seventy-three years of its existence. The first evidence we have in its publications, that this society considered catarrhal diseases worthy of its consideration was from the pen of Dr. D. B. St. John Roosa, in 1880, "On the

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Evil Consequences of Neglected Colds in the Head." During five years from 1880, nine papers were published calling attention to diseases of the upper air-passages. In the succeeding five years, sixteen papers on this subject found places in their Transactions ; while in the last two years, thirteen papers on these diseases were presented to that Society. This shows an awakened interest in this department of medicine hardly equalled in any other. But I cannot think we have yet reached a just appreciation of its importance, or are likely soon to overestimate its value.

I have stated that traumatism is the cause of more catarrhal trouble than all other causes combined. It so far outnumbers other causes, and produces effects that best typify what we see and understand as catarrh, that this, alone, may profitably occupy all the time we have for this subject to-day. Bosworth states in his recent work on "Diseases of the Nose and Throat," that, "Deformities of the nasal septum are probably the most frequent of all exciting causes of catarrhal inflammation." Certainly, the most frequent causes of these deformities are traumatic. Everybody has experienced the instability of uprightness, the uncertainty of our steps, the proneness to stumble—in childhood, if not since. The contusions from falls in early life, from fisticuffs a little later, from balls and bats and various accidents that befall this protruding feature, are quite sufficient to displace the septal cartilage and bring it in contact with some portion of the outer wall of the nose. By careful count and computation, four-fifths of all septa in dried skulls are distorted. We may add a large percentage of the remaining fifth, if we count deflections of the cartilaginous septum during life. Every deflected septum does not cause catarrh, something beside simply a deflection is necessary. But every persistent contact of surfaces that are not normally in contact in the nose will produce the condition we are calling catarrh ; and further, this condition never exists where there is not, or has not been, some abnormal contact or obstruction. It is not necessary that there should be an occlusion of the nostril, an adhesion of surfaces, or even obstruction to respiration. Our attention has often been called by writers upon this subject, to the necessity of free drainage and an open respiratory tract. This is certainly not unimportant. But other obstructions may exist, obscure but of immense moment as etiological factors. Little points of contact are found to be the cause of great trouble. We observe a good percentage of patients who have a dropping into the throat, with chronic pharyngitis and offensive breath, yet can breathe freely through both nostrils.

To this condition, then, of abnormal contact of surfaces of septum and turbinated bodies—more frequently the middle—I want to urge your special attention in every case of catarrh. It may result from a deviation of the septum, or from congestion or hypertrophy of the turbinated

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tissues, from an osseous or cartilaginous spur, a cavernous turbinated bone, a polypus, foreign body, or other obstruction.

I read in some of our books that a "catarrh is the prime and great cause of hypertrophies and the narrowing of the nasal passages." If this be at all true, the reverse is certainly true. Contact causes catarrh. There is no doubt that the physiological function of erectile tissue in the nose, recurring at frequent intervals, does destroy the elasticity of the parts, and hypertrophic, or, more likely, hyperplastic changes result. This produces the condition we speak of as hypertrophy, bringing surfaces in contact.

Here another stage in the causation of catarrh begins. The secretions so abundantly poured into the nasal fossæ, which are normally alkaline and bland, being retained in this most favorable situation for rapid deterioration, speedily become acrid and irritating to the tissues over which they pass, as they overflow their prison bounds. These tissues in turn become inflamed and carry forward the devastation. It is thus that catarrh becomes chronic, tending ever to grow worse and extend its ravages to all communicating and accessory parts, its putrescent vapors to the lungs, and putrid matter to the stomach.

Otologists tell us that nine-tenths of all deafness results from middle-ear disease, induced by nasal and pharyngeal inflammation. Dr. Roosa, in the paper referred to, speaks of "hypertrophied tonsils, thick voice, impaired hearing, narrow chest, and watery eyes," as results of neglected colds in the head. And I believe that bronchitis, laryngitis, tonsillitis, faucitis, pharyngitis, hypertrophic rhinitis and gastritis, being associated with are often caused by nasal catarrh.

We must not forget or fail to recognize numerous characteristic neurotic troubles caused by this contact of surfaces in the nose. The so-called catarrhal headache, supra orbital neuralgia, pain at the bridge of the nose, at the back of the eyes, in the ears, through the various sinuses—superior maxillary, ethmoidal, sphenoidal, and frontal—in the teeth and throat, and wherever branches of the fifth nerve may be distributed. Hay-fever and asthma are often, if not always, sequelæ of nasal irritation and belong in that large list of reflex or remote manifestations of local causes in the nose. Dr. Jacobi stated in a recent discussion of reflex causes of disease, at the New York Academy of Medicine, that "he had seen at least a dozen cases of chorea which had no other cause than chronic naso-pharyngeal catarrh, deviation of the septum, ozæna, hypertrophy of the tonsils, etc.;" and Dr. Baruch on the same occasion said: "The first positive case which removed my scepticism on the reflex influence of nasal peripheral irritation, is a cure of true epilepsy," and he related the history of this case and its cure by removing the cause in the nose.

If evidence were needed of the baneful effects of catarrh and all it

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implies, volumes might be written and opinions of recognized authority be multiplied to almost any extent.

The important question remains, How can catarrh be cured? "Is the cure of chronic nasal catarrh as difficult as has been supposed?" I tried to answer this question in a paper read before the County Medical Society of New York two years ago, and published in the *New York Medical Journal*, March 22, 1890. The conclusion arrived at was, "It is not so difficult to cure as by many has been supposed, for it is the result of removable causes in most cases." Having discovered the foe and its lurking place, it does not require a Hercules to destroy this Hydra, or if it does, our present age can provide the man. Common sense and skilful surgery are as potent as the club of the deliverer of Argos.

Remove the cause, which almost always may be found. The most frequent—because of its limited space and greater exposure to irritants and injury—is the middle turbinated body. Its pressure upon the septum is, I venture to affirm, the forerunner of a longer train of evils than any other simple pathological condition to which human flesh is exposed. Take away, by any means or instruments which you can use best, just a sufficient amount of tissue to relieve contact, and you will almost certainly cure your patient of catarrh. I must urge you to consider most carefully the various complications that may arise, the time and after-treatment required, the necessity for suppressing granulation-tissue that is prone to grow, the danger of operations so near a vital part, the conservatism and wisdom to be exercised in all these cases. But I cannot here consider drugs found to be useful, the means for disinfecting and keeping the parts cleansed, the constitutional treatment needed, the instruments, appliances, etc.

The importance of frequent applications to a diseased condition of the nose or throat can hardly be overstated, whether the disease be diphtheria, tonsillitis, a common cold, or any of the numerous conditions for which we use medicines. Whatever local effect is produced by medicine applied to these parts is quickly dissipated by the secretions which are so abundant, by constant use of the organs, and the impossibility of retaining for a considerable time anything in the throat. Decomposition of organic substance and absorption of the products, ptomaines, etc., produce septicæmia, and to prevent this result we must remove the cause. Cleanliness is indicated and essential, as in all surgery. To destroy the rapidly multiplying germs of diphtheria, and other diseases akin to it, we should order medicines to be given every fifteen minutes, day and night, from the first indication of the disease till its last appearance in the throat. These remedies need not and should not, be disagreeable to the patient, but their invariable frequent administration should be enforced.

I cannot take your time to relate cases cured by the treatment I have

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indicated for diseases of the upper air-passages. They are sufficiently numerous to have convinced me of their utility. More than seventy-five thousand visits have been made by patients at the Throat Department of Manhattan Eye and Ear Hospital since my service commenced there, and with fourteen trained assistants we have studied and tested these methods thoroughly.

Ever since "The Lord God breathed into his nostrils the breath of life, and man became a living soul," every child born has received the same benediction, in the same manner. And so long as life lasts should the functions of the nose and throat be preserved in their integrity.

SOME OF THE RECENT ADVANCES IN SURGERY.

By L. M. Bingham, Burlington, Vt.

TUBERCULAR SURGICAL DISEASE.

The variety of tubercular conditions which may be relieved or cured by surgical interference are numerous, and come largely within the scope of the general practitioner.

The frequently chronically enlarged glands of the neck and axilla among children; the cold or chronic abscesses upon older persons; caries of bone and cartilage, and often fistulous openings as a result of former abscess; diseased joints, with many other conditions, are recognized in most instances as tubercular.

For chronically enlarged indurated glands of tubercular nature, extirpation is the recognized treatment.

Abscesses and fistulæ are freely opened, scraped or excised, thoroughly irrigated with one to two thousand bi-chloride solution, packed with iodoform gauze and dressed antiseptically. The cavity may be filled with sterilized iodoform ointment, rather than packed with gauze. At present iodoform gives best results as an application to localized tubercular fields.

Tubercular Joints. When disease involves interarticular substances resection is preferred to other methods. Erasion may be practiced when the outer joint structures are involved, or more extensively where joints are slightly movable, like carpus and tarsus.

Tubercular disease of bone is treated by thorough removal of diseased part, and thorough application of iodoform. Sanitary and hygienic conditions are never to be lost sight of.

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Climate and surroundings are not so essential in surgical tuberculosis as tubercular disease of lungs, but always beneficial. An early operation gives best results. Recurrences may be expected in strongly predisposed tendency.

Why the cervical glands are most commonly the seat of tubercular disease is probably the fact that they are in such close relation to the tonsils. A large proportion of strumous children have chronically enlarged tonsils, with frequent sub-acute attacks of tonsillitis,—the chain of lymphatics being infected from direct absorption from tonsils: tubercular germs being transmitted through lymphatics instead of circulation. Early removal of chronically enlarged tonsils is recommended.

In spring of 1891, May, I think, there came to my service in Mary Fletcher Hospital a young man with marked family history of tubercular disease; had tubercular disease of right testicle; was reduced in flesh from 175 to 115; loss of appetite, and characteristic temperature. On operating to remove the testicle it was found that both testicles, scrotum and spermatic cord were thickly studded with tubercular deposits; scrotum, testicles and both cords to internal ring were removed. Patient made a good recovery, regained appetite, and expressed himself as feeling better at the end of three weeks than for years. Saw him following September; had regained his former flesh of 180. There was a slight area of tubercular deposit over left cord; no general infection.

The strong tendency of tubercular condition to attack some portion of the spinal column has brought about a more thoroughly early diagnosis in order to treat the disease while area is small. The early opening or treatment of tubercular abscesses at their original seat, before dissecting along course of muscles and tendon, is giving good results.

Removing a portion or entire arch of vertebra, and scraping out small points of carious matter of the body, where accessible, is meeting with success. Traumatisms of the spinal column and cord are being more thoroughly investigated. Free incisions are made to spinous processes and laminæ.

During my service at the hospital the past year there came under my care a middle aged man who, about four months previously, had received a severe injury to sacral region of spine. About midway the sacrum or median line was a sinus leading down to osseous tissue but not bare or necrosed bone. The local symptoms were pain and extreme tenderness on pressure; almost complete paralysis of lower extremity and bladder; also had attacks of cystitis; unable to walk, having strong contractions of flexor tendons of leg and foot. I made a free incision in median line, to the spine of sacrum, being guided by the fistulous track to the seat of injury. A depressed fracture of posterior wall of sacrum was distinctly seen—depressed portion being about three-fourths of an inch in diameter. On removing periosteum and dense tissue covering the

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depressed portion, it was found to be in two pieces, the sharp point of each pressing into the meninges of the cord. The pieces were readily removed. After the rather obstinate hemorrhage was controlled it was distinctly seen that plastic materials had been thrown out and membranes considerably thickened. The wound was left open, packed with iodoform gauze and dressed antiseptically. Improvement was very slight; spasmodic attacks were not so severe or as frequent. Within a few weeks the bladder symptoms improved, and sensations in extremities gradually returned. The patient remained in hospital for a few months longer until wound was closed. Before leaving he was able to walk across the ward without assistance, and all other conditions improved, yet prognisis was unfavorable to a complete recovery. Might it not have been fairly supposed that the portions of cord injured would have regained more fully its normal condition had the operation been done early?

ABDOMINAL SURGERY.

This field of surgery has received more direct attention from eminent surgeons than all others combined.

While comparatively nothing new of late has been introduced, some advances have been made in establishing the utility of different operations. Time will not permit of details, as the subject covers a large field.

SURGERY OF ALIMENTARY TRACT.

Successful operations upon stomachs are reported.

Gastrotomy for removal of foreign bodies. Pylorectomy, resection of stomach for malignant diseases of pylorus: (Gastro-enterostomies) and Gastro-Colotomies for malignant diseases of pylorus. Gastrotomy for disease at cardiac extremity.

The mortality of these operations is great, and they are only done by surgeons in large hospitals.

INTESTINAL SURGERY.

This is a more common field, and success so brilliant that surgeons throughout the country are engaged in its performance. So frequent are its demands the general practitioner is urged to a familiarity of conditions, and symptoms requiring it, as he often finds it necessary to operate. Many conditions require prompt and unquestioned operation; others only after vigorous and energetic treatment from other prescribed plans not operative.

Among the first are wounds of intestine, rupture of intestines, sudden and complete obstruction without apparent cause. Complete occlusion of rectum, or sigmoid flexure from malignant disease. Among the latter are intussusception, for which successful resections of intestines have been made—often the failures of massage and large hot water

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enemas. Successful resections of intestines for disease and injury are common.

Well authenticated cases are recorded where exploratory incisions into the abdomen has revealed causes of obstruction to be bands of adhesion, or simple twisting of intestines, which were readily relieved.

Ileo-colostomy for disease of cæcum is also successfully performed.

Operations for appendicitis have saved many lives, and is accepted as an operation with which all surgeons should become familiar. I saw five cases operated upon by McBurney, and all made a complete recovery. Most of these cases were of the recurrent variety, and in no two of them did the appendix vermiformis occupy the same position. I believe all had a circumscribed abscess, holding from one-half drachm to an ounce of pus.

Operating upon gall bladder for removal of calculi are becoming more numerous in America. The operation is usually uncomplicated, and gives best of results.

HERNIÆ. The great mortality following operations for strangulated herniæ are due to delay in operating rather than the operation itself. The assurance of success by present antiseptic surgery leaves no excuse for using prolonged taxis either with or without ether. The surgeon who resects a portion of intestine in order to give the patient a single chance is not pleased with the delay. When the operation is done early everything is favorable to its success.

An attempt to the radical cure of the hernia should be made at the time of operation. One can pay little attention to the latter condition when the patient is nearly moribund.

While there is no operation which gives even a fairly probable prospect of radical cure for hernia, the possibility should be taken into consideration. No operation should be recommended for any kind of hernia that can be retained and well supported by a truss. Too frequently does the illy fitting truss bring discredit to some member of our profession. No one can properly fit a truss without understanding the anatomy of hernia, and the requirements to be fulfilled. I have just completed a few months trial at fitting a truss to a double femoral hernia, and finally succeeded. I feel much greater satisfaction than if I had done a successful operation, with the present chances of final success.

Several years ago I operated upon an irreducible, partially strangulated femoral hernia. The patient was about eighty years of age. The gut was held in the sac by strong bands of adhesion, about 12 in number. These were separated and intestines returned, recovery following. The great liability of an irreducible hernia becoming strangulated would warrant an operation in many cases, afterwards retaining it with a truss.

Ventral hernia following openings into abdominal cavities are common. Too little attention is given the liability of this complication. The

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incision should be clean cut, down to transversallis fascia. Dividing fascia and muscles with handle of scalpel or finger should be avoided as much as possible. In closing the wound the structures between peritonæum and skin should be carefully approximated if need be by separate lines of sutury. On going about for the first few weeks an abdominal band or supporter should be worn.

ABDOMINAL DRAINAGE.

This subject is being most thoroughly discussed. To-day the method looked upon with most favor is capillary and tube drainage combined—glass tubes and iodoform gauze. The glass tubes are placed at most pendent point desired to be drained, without pressure—the outer end being outside the abdomen; the strip of iodoform gauze is passed down through the tube with a long probe, packed fairly firmly at the bottom, and tube loosely filled above,—the glass tube and gauze projecting through the first layer of dressing, and protected by a separate loose pad of antiseptic gauze. The gauze at first, if much saturated, is changed every hour. The glass tube is usually removed upon second day, if not before. If continuation of drainage is necessary, it can be done with the gauze through the opening left by the tube. The indications for continuation of drainage is saturation of gauze by bloody serum. After the gauze has been in place for a few hours, only presents moisture on withdrawal, drainage should be discontinued.

In cases of apendicitis where the abscess is large and abdominal opening is directly over cœcum as it is in nearly all cases, the whole thing may be packed with iodoform gauze, from bottom of abscess to surface of abdomen. Change when saturated, or at least, every other day.

Washing out the Abdominal Cavity.—Irrigating the abdominal cavity with a considerable amount of sterilized water at a temperature of 110 F. at the close of a long continued manipulation of intestines and other viscera, when adhesions are broken up and considerable oosing of serum, I believe to be highly beneficial in relieving shock, and restoring intestines in their normal condition.

The irrigation must be done by having an open tube 10 or 12 inches in length for a nozzle, which should be passed beneath the intestines, so that the current of fluid flows upward, floating the intestines.

Irrigation for washing out escaped pus, has always seemed to me to be a doubtful proceedure, the very thing to spread the septic material throughout the abdomen. A much safer plan is to encompass the supposed supurating point with flat sponges of the right size, when if pus once escapes it will be quickly absorbed by the sponge and removed from the abdomen, having plenty of fresh sponges to take its place. I believe it to be safer and more effectual to sponge away septic material

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from limited area, than to wash it away. Operations requiring slight amount of manipulation, and breaking up of slight adhesion, require no irrigation or drainage.

GENITO-URINARY SURGERY. SUPRA PUBIC CYSTOTOMY.

Supra Pubic Cystotomy has found many advocates during the past year.

For removal of tumors or growths from prostate or bladder, the supra pubic operation is preferred by many American surgeons; for removal of large stones it is fast gaining ground.

HYDROCELLE.—The open method or radical incision is preferred in hospital practice; but in private practice when antispeptic precaution cannot well be carried out, repeated attempts at radical cure may be practiced by injecting into the sac, after thorough evacuation of the fluid, solutions of iodine or carbolic acid.

VARICOCELE:—If relief is not obtained by well fitting suspensory bandage, a free dissecting of veins at upper portion of scrotum, double ligature and removal of intervening portion gives good results. Less danger of injuring cord and a safe proceedure under present precautions.

STRICTURES OF URETHRA.

Strictures of small calibre and long standing are treated mostly by internal urethrotomy and subsequent and long continued dilatation with steel sounds.

Stricture in membraneous portion requiring peroneal drainage after operation.

Operations upon kidneys are more boldly done, and increasing in variety. Mortality is about 50% for all operations upon kidneys.

INTUBATION OF THE LARNYX.

The operation has come to stay, and is growing in favor in both countries. Its advantage over tracheotomy in small children is recognized. Seeming less formidable to parents, it is earlier consented to. Some improvements have been made in instruments, permitting a larger opening, and less liable to become plugged by dry secretion or loose membrane. General practitioners should have a set of tubes within reach, surgical skill is not required for their introduction or removal.

TETANUS.

Tetanus is now regarded as a specific infectious disease. Germs have been isolated and pure cultures obtained. They may develope in the soil and exist anywhere.

Kitasato, who produced the pure culture in Koch's laboratory innoc-

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ulated 96 animals with specimens of soil from 43 different countries. The soil from 27 giving positive results. Thirty-nine of the animals died tetanic. It is also ascertained by repeated experiments that the germs of tetanus have no effect when taken into the stomach, and are known to have passed the entire length of alimentary canal, injected subcutaneously and produce positive tetanus. Tetanus has always been regarded as a disease of filth, and more prevalent among horses than other animals. My recollection of tetanus is confined to a few cases, most of these cases following compound fractures, where broken bone and exposed tissues came in contact with the earth, or puncture wounds from metalic substances which had been in contact with soil for some time. For treatment, an early and thorough scrubbing of exposed tissues with strong antispeptic solution would recommend itself. For punctured wounds, free incisions are reccommended, to expose the injured tissues beneath the skin.

PLASTIC SURGERY.

Thiersch's method of skin grafting is meeting with great success at the hand of both foreign and American surgeons.

This method obviates the often unsightly cicatrix, caused by healing by granulations, also gives surgeon less hesitancy in removing healthy tissue in order to more thoroughly remove disease. The process is one requiring great care. Time for healing, ten days to six weeks. The parts to receive the grafts are washed with boiled water, and fully dried. The part from which the graft is to be removed should be thoroughly cleansed with soap and water, bichloride solution, and lastly cleansed with sterilized water. The epidermal layer only is removed, and this is best done with a sharp, thin razor. No subcutaneous fat should be removed with the graft. The graft may be any size convenient for removal. After removal it is not unlike wet tissue paper and requires great care in handling. A good method is to place the graft in a solution of common salt (0.6% solution); in this solution, with silver probes, it is spread out to its full size and carried to its place upon probes or smooth instruments. It is then carefully smoothed out, covering fully the margin of the denuded surface. If not sufficiently large another should be put in place in same manner. Over all is placed a piece of lister protective, or oil silk, fresh from the saline solution. Dry sterilized dressings are applied and all left from 7 to 10 days. While in New York, I saw McBurney do several graftings; the area covered in one case was at least 80 square inches; all perfectly healed, without one particle of contraction or cicitricial tissue.

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INFECTION OF WOUNDS.

It is a very interesting subject, the conditions underlying it being numerous and complicated. When all the known and best precautions are taken, such as careful preparation of patients, assistants, and instruments, fluids, dressings, sponges, drainage tubes, and in fact, everything pertaining to the operation, we are not positively sure of preventing infection or suppuration.

It is a well recognized fact that a number of people may be equally exposed to the germ of an infectious disease like scarlatina, measles or typhoid fever, and only a portion contract the disease. In fact the living germs of disease have been placed upon a favorite seat of innoculation and negative results followed. The condition of the patient or parts operated upon have something to do with wounds as well as other diseases. It is a fact that simple bruises which lacerate capillary or larger vessels, beneath the skin, without least injury to the integument, may or may not suppurate. Would it be fair in the suppurative cases to positively affirm that the infection was from external causes, and not dependent upon chemical changes or condition of blood. Would it be unscientific to believe that a first visible evidence of tubercular disease may make its appearance in a surgical wound from lymphaties in vicinity, not from external sources.

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IN MEMORIAM.

ALWYN HARDING CHESSMORE, M. D.

By C. J. Russell, Hinesburgh, Vt.

Alwyn Harding Chessmore, M. D., was born in Warren, Vermont, Oct. 17th, 1837. When eight years of age his father died, and soon after his mother, in humble circumstances, moved to Chelsea, Vt., where, in the common schools of that town, the subject of this sketch laid the foundation for his future education and usefulness. At the age of 16, by patient toil and perseverance, he was able to enter the Academy at Johnson, where he fitted for College, but before entering he concluded to begin the study of his chosen profession without more delay than was necessary while obtaining the means. In 1856 he attended lectures at the Castleton Medical College, and the next spring he entered the office of Dr. Goodwin of Rockford, Ill., where he continued his studies, teaching school winters until the winter of 1859 and 60, when he entered the Medical Department of the University of Vermont.

So thorough had been his previous application that in the following June he received from that institution the degree of M. D. He immediately located in Huntington, Vt., forming a co-partnership with the late Dr. Geo. W. Bromley, whom he soon bought out, and continued to practice until the fall of 1862. At the beginning of that war which deluged the nation with fraternal blood, he entered the Union Army as assistant surgeon of the 5th Regiment Vermont Volunteers, but was soon promoted to the position of surgeon of the 5th Regiment, and by virtue of this rank soon became brigade surgeon. He shared in all the vicissitudes of the Army of the Potomac from this time on, until September 25th, 1864, when he was mustered out in the Shenandoah Valley, and returned to Huntington. But the war was not yet ended, and the Doctor could not remain away from the field of activity. He returned to City Point, Va., where he served as contract surgeon until the close of the war. He then returned to Huntington, the town of his adoption, where he continued to reside until the day of his death.

Dr. Chessmore was not only a very successful physician, but he was also very prominent in business matters, having the personal supervision of a circular saw-mill, clapboard-mill, shingle-mill, planing-mill, cheese-box factory, and custom grist-mill, all of which he owned,

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In politics he was a stanch republican, and was a member of the State Senate, from his county, in 1874, and represented his town in the lower house in 1886. At the establishment of the State Board of Health in 1886, Dr. Chessmore was appointed one of the three members, and was made president of the Board, which position he held at the time of his death.

He married a daughter of Hon. Henry Gillette of Richmond, who died about fourteen years ago leaving a son, who still survives.

Dr. Chessmore died of pneumonia Jan. 27th, 1891, after a short illness. He was taken violently ill at the onset of the disease, and realized his condition to the end. The funeral was held January 29th, with Masonic honors, and the remains were taken to Richmond for interment beside the body of his wife.

SKETCH OF THE LIFE OF DR. C. L. ALLEN.

By C. S. Caverly, Rutland, Vt.

A modest, unassuming man, quiet in manner, slow and deliberate of speech, short in stature, large, well formed head, with truly patriarchal gray hair and long gray beard, prominent features and brown eyes, was for many years a familiar object in Rutland County and throughout western Vermont. The casual visitor, the stranger, stopped to observe that face. It was one that impressed itself on the memory and once seen was recognized again. Kindliness and intelligence were strongly visible, and to the public eye, as well as to the eye of the patient sufferer in the sick room, it personified these characteristics.

The latter generation of physicians in and about Rutland, are likely long to hear the name of Dr. C. L. Allen, as standing for the thoughtful, self-sacrificing, sympathetic physician.

Dr. Allen was first and foremost a student. He was to an extraordinary extent a "well read man." He was not an orator or a man of words, but he was a thinker. His patients knew when they consulted him that he would give them thoughtful attention. I have often seen him after physically examining a puzzling case, sit by the bedside with eyes steadily fixed on the patient for several minutes in deep thought, saying nothing and hardly moving a muscle. The result was manifested after we retired to the consultation room. How many physicians can give personal testimony to the worth of this thoughtful man's advice; and more—how many of us can bear witness to the truly gentlemanly

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courtesy that always marked his relations to his professional brethren. Some of us have seen him under trying circumstances, when it would have been easy if not human to criticise unkindly other physicians, yet Dr. Allen's references to other's mistakes were invariably couched in charitable and kindly words. It is rarely the privilege of a physician of so long experience to leave such a record. Dr. Allen was always a gentleman and none of us among whom he worked and studied can forget the courtesy he invariably displayed toward us.

He was devoted to his profession and never forsook the high and honorable ideal which he had established for himself. He did not labor for the pecuniary reward which stimulates many to unusual efforts to become successful practitioners. He never soiled his fingers with usurious practices, nor indulged the vulgar scramble for riches, nor squeezed poverty for financial reward. He was an honest man withal, and no better evidence could be had of his forgetfulness of self and his devotion to science and humanity, than the modest size of his earthly possessions at the end of so long and honorable a professional career. He left his family and friends a far richer legacy than any mere worldly wealth: he bequeathed them a name widely and honorably known.

Charles Linnaeus Allen was born at Brattleboro, Vermont, June 21, 1820. His parents were Jonathan Adams Allen and Betsy Cheney. Jonathan Adams Allen was born November 17th, 1787, and was a great-grand-son of Jonathan Adams, born 1700, for whom he was named, and who had his skull crushed on a rock by Indians in massacre, was left for dead, but lived to be over one hundred years old. He was a relative of President Adams. J. A. Allen graduated at Dartmouth Medical College, practiced for a time in Brattleboro and then removed to Middlebury, where he died in 1848 (Feb. 2d). Dr. C. L. Allen's mother died March 24th, 1826, and he spent his early boyhood on a farm in Jamaica with his mother's relatives. At fifteen years of age he was apprenticed to a printer in Burlington, Vt., but not liking the way he was treated, ran away from there and returned to Middlebury, where he began a college course in 1837, working his own way. He was suspended one year for leaving town to attend the "Tippecanoe" mass meeting in Brandon in 1840, but graduated in 1842. Among his friends in college were Dr. Norman Hudson, the Shakesperean scholar, J. G. Saxe, the poet, and Hon. E. J. Phelps. After graduation he tutored for two years in North Carolina, but returned to Vermont and graduated at Castleton Medical College in 1846. He practiced medicine in Middlebury and in 1854 married Harriet Wood Garfield, by whom he had two daughters, Francis Louisa, who married Edward D. Page, and Harriet Warren, who married John C. Goddard For a time Dr. Allen acted as Professor of Chemistry in Middlebury, but was not appointed such. Mrs. Allen died April 25th, 1858. While practicing his profession in

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Middlebury, Dr. Allen also practiced in Rutland and lectured in Castleton Medical College, where he was afterwards President. In the spring of 1862 he lectured in the Medical Department of the University of Vermont on Civil and Military Hygiene. Leaving there, in June 1862, he took the examination to enter the Brigade Corps of Surgeons, U. S. V., passing the best examination up to that time, and with one exception, during the war. He was at once appointed on the examining board with Drs. Clymer and Brinton. Later he was transferred to the Department of the South, and still later made Medical Purveyor of that Department. In August, 1864, he resigned from the army and resumed practice in Rutland. May 30th, 1865, he married Gertrude Margaret Lyon, by whom he had three children, Edwin Lyon, Charles William and Harris Campbell. He had a considerable reputation for his treatment of Bright's Disease and other dropsical diseases, and among the patients cured by him were Gen. Schenck, ex-minister to England and Lieut. Greenleaf, U. S. N. The essential part of his treatment was the exclusive diet of skimmed milk. From shortly after the termination of the war until President Cleveland's administration, he was Pension Examining Surgeon, and was re-appointed under President Harrison, and held the position until his death. He was Secretary of the Vermont State Board of Health from its organization until his death. He was a member of the American Academy of Medicine, American Medical Association and numerous other societies. In his younger years he was far from robust, and has often told the writer that he was at one time considered hopelessly sick with phthisis. He recovered however, and until within a few years was perfectly well. A year or two before his death he discovered that he was passing albuminous urine, but under strict dietary and medicinal treatment, it disappeared. During the spring of 1890 he had experienced considerable dizziness and his eyes had given him much trouble. At the time of the semi-annual meeting of this society in Rutland last year, he was in Boston for the purpose of consulting an occulist. He died suddenly at his home in Rutland on the morning of July 2nd, 1890, of cerebral hemorrhage.

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CONSTITUTION AND BY-LAWS

OF THE

Vermont State Medical Society.

(As revised October, 1887.)

CONSTITUTION.

ARTICLE I.—NAME.

This Society shall be called the Vermont State Medical Society.

ARTICLE II.—OFFICERS.

The officers of this Society shall be a President, Vice-President, Secretary, Treasurer, Auditor, Publication Committee of three members, Executive Committee of three members, of which the Secretary shall be one *ex officio*, Board of Councillors, consisting of one from each county, and a board of License Censors, consisting of three members, all of whom shall be elected annually at the opening of the second day's session, by ballot when demanded by any member present, or in such other manner as the Society shall direct, and shall hold their respective offices until the close of the next annual meeting, and until others are chosen.

ARTICLE III.—MEETING.

There shall be an annual meeting of this Society held on the first Thursday and Friday after the second Wednesday in October, at such place as shall be designated by vote, at the previous annual meeting.

ARTICLE IV.—MEMBERSHIP.

Any physician residing within the State, who is a graduate of a regular recognized Medical School, may become a member of this Society at any regular meeting, upon recommendation of the Board of Councillors and vote of the Society, by signing the Constitution and paying the sum of two dollars to the Treasurer.

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ARTICLE V.—Discipline.

Any member of the Society guilty of intoxication, unprofessional or irregular practice, or of gross immorality, or for other good reasons, may be expelled or suspended from the Society by a vote of two-thirds of the members present at any annual meeting.

ARTICLE VI.

This Constitution may be repealed, altered or amended at any annual meeting, by a vote of two-thirds of the members present, provided such repeal, alteration or amendment be proposed at a previous annual meeting at which such repeal, alteration or amendment will come up for action.

ARTICLE VII.

This Society may adopt such By-Laws, not repugnant to this Constitution, and may repeal, alter or amend the same, in such manner as a majority at any annual meeting may deem proper.

BY-LAWS.

ARTICLE I.—Duties of Officers.

Sec. 1. The President shall preside at all meetings and perform all the duties incident to such office. He shall deliver or cause to be read an address or dissertation on some medical subject at the annual meeting at which he presides.

Sec. 2. The Vice-President shall preside in the absence of the President, and perform all his duties and possess all his privileges.

Sec. 3. The Secretary shall keep a record of the proceedings of the Society, and of the members present at each meeting; shall arrange and publish the programme at least two weeks before each meeting; shall conduct the correspondence; and shall have his necessary expenses defrayed from the funds of the Society. He shall, if unable to attend the meeting of the Society personally, send the Records to some member in attendance. He shall receive an annual salary of fifty dollars.

Sec. 4. The Treasurer shall collect and disburse all monies of the Society, agreeable to their directions, and make report of his doings to the Society at its annual meeting.

Sec. 5. The Auditor shall examine and verify the accounts of the various officers.

Sec. 6. The Executive Committee shall make selection of a subject or subjects for the programme for the next ensuing meeting; shall make

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assignments of the parts to any of the members, as in their judgment they think advisable, and report the same to this meeting and to each and every subsequent meeting.

They shall make such other arrangements for the meetings of the Society as they shall deem essential for its best interests.

SEC. 7. The Publication Committee shall receive all papers referred to them by the Society, and as soon as possible subsequently to the annual meeting of the Society, shall publish such of those papers as they may deem best suited to promote the interests of the profession and the public good, under the title, Transactions, and perform all other appropriate duties.

SEC. 8. The Board of Councillors shall choose its own officers and make its own regulations, providing they do not conflict with the Constitution and By-Laws of this Society.

There shall be a meeting of said Board on the first day of the annual and semi-annual meetings, and at such other times as the Board shall determine.

The duties of said Board shall be to examine the credentials and qualifications, with reference to their method of practice, etc., of persons desirous of becoming members of the Society, and present at each meeting the names of such as, in their opinion, are eligible to membership under the Constitution and Regulations of the Society, and to report the names of members deceased, if any, and recommend such action in each case as they may deem best. The Councillors shall recommend for membership, only such physicians as shall present to them their diplomas, or a certificate in writing signed by some member of the Society in good standing, stating that he has personal knowledge of said applicant having a diploma of a regular medical school.

SEC. 9. It shall be the duty of the Board of License Censors to issue license certificates to regular physicians wishing to practice medicine in this State, in accordance with the State law regulating such practice.

ARTICLE II.—DUES.

SEC. 1. Every member of this Society (honorary excepted) shall pay to the Treasurer an annual fee of two dollars.

SEC. 2. Any member who shall fail to pay his dues for a period of three years, shall be dropped from the Society, and his name stricken from the roll of membership, and he shall be so notified by the Secretary.

SEC. 3. Any member who has been dropped from the Society for non-payment of dues may be re-elected after any number of years by a vote of three-fourths of the members present at any regular meeting, upon payment of the three years' arrearages.

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ARTICLE III.—Honorary Members.

The Society may elect at each annual meeting, not more than four honorary members, non-residents of the State, who shall have the same privileges as ordinary members, except that they shall not be eligible to office, nor have the right to vote.

ARTICLE IV.—Delegates.

Delegates shall be appointed annually to represent this Society in the American Medical Association; the Medical Department of the University of Vermont and of Dartmouth College at the examination of candidates for graduation, when duly notified; the Connecticut River Valley Medical Society; the White Mountain Medical Association; the White River Valley Medical Association; the Northern New York Medical Association; the State Medical Societies of the New England States together with those of New York, and such other States and Societies as the mutual interests of the societies may direct.

In cases where delegates are unable to attend to the duties of their appointment, it shall be their duty to notify the Secretary, of such inability, and the Secretary and President shall appoint others to supply their places.

ARTICLE V.

Every member who is appointed to prepare a paper for any meeting shall, at least thirty days before such meeting, furnish to the Secretary a short abstract of the same, which abstract, or an epitome of which, the Secretary shall cause to be printed in the programme, following the announcement of the paper.

ARTICLE VI.

Any member wishing to withdraw from the Society shall be permitted to do so on his written request after he shall have presented the Treasurer's receipt for all monies due.

ARTICLE VII.

The Constitution and By-laws, together with the names and residences of the members in good standing, shall be published in every volume of the Transactions.

ARTICLE VIII.

The names of the deceased members of the Society, with the dates of birth, graduation, admission to membership, death and such other items in brief, of personal history, as may seem desirable to the Committee on Publications, shall be printed in each copy of the Transactions under the caption, "In Memoriam."

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LIST OF MEMBERS.

The following is the list of the members of the Society.

Allen, J. M. St. Johnsbury.
Allen, Joel Johnson.
Adgate, L. W. East Hardwick.
Albee, E. S. Bellows Falls.
Andrews, B. J. Burlington.
*Allard, J. F. E. Winooski.
Baker, O. C. Brandon.
Briggs, Geo. C. Burlington.
Brown, E. M. Sheldon.
Bingham, L. M. Burlington.
Brown, H. S. St. Johnsbury.
Bradford, P. D. Northfield.
Bullard, G. B. St. Johnsbury.
Brooks, S. T. "
Bailey, A. C. West Randolph.
Brewster, J. D. Windsor.
Brigham, C. W. Pittsfield.
Bisbee, A. B. Montpelier.
Bishop, E. H. Jericho.
Branch, C. F. Newport.
Boynton, Henry Woodstock.
Bingham, A. L. Williston.
Baxter, E. K. Sharon.
Bartlett, H. O. Milton.
Bugbee, A. G. Derby Line.
Bates, E. A. Highgate Centre.
Brigham, F. L. Pittsfield.
Blake, W. C. Lyndon.
Burnett, D. L. So. Royalton.
Clark, S. S. St. Albans.
Carpenter, Walter Burlington.
Cilley, F. H. Jericho.
Cutting, H. A. Lunenburgh.
Cahill, Geo. S. Burlington.
Comings, F. W. No. Troy.
Clarke, J. M. Burlington.
Campbell, E. R. Bellows Falls.
Church, W. G. Stowe.
Crain, M. R. Rutland.
Caverly, C. S. Rutland.
Camp, C. F. Barre.
Chandler, C. E. Montpelier.
Crandall, H. A. Burlington.
Cooty, Thomas A. Mt. Holly.
Carpenter, F. W. West Rupert.
Chase, R. M. Bethel.
Draper, Joseph Brattleboro.
Draper, C. R. St. Albans.
Dunsmore, George St. Albans.
Dyer, O. G. Brandon.
Darling, S. E. Hardwick.
Darrah, A. J. Enosburgh.
Davenport, Geo. East Randolph.
Davis, B. W. Montgomery.
†David, A. Burlington.
Dana, E. P. South Royalton.
Daley, O. W. White River Junction.
Erwin, C. L. Newport Centre.
Eddy, M. H. Middlebury.
Fairman, E. P. Hardwick.
Fox, G. H. Rutland.
Foster, George S. Putney.
Flanders, L. W. Burlington.
Ferrin, C. M. Essex.
Flanders, G. W. E. Fairfield.
Green, L. M. Bethel.
Grinnell, A. P. Burlington.
Griswold, S. H. Rutland.
Goss, A. V. West Randolph.
Gale, H. L. Barre.

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Goodrich, V. A. Brookfield.
Grout, D. D. Stowe.
Giddings, W. H. Bakersfield.
Goodall, F. W. Bennington.
Howe, H. T. J. Waitsfield.
Holton, H. D. Brattleboro.
Huntington, W. M. Rochester.
Huntington, W. D. Rochester.
Hutchinson, Wm. R. Enosb'gh Falls.
Hamilton, J. H. Richford.
Hunt, C. H. Worcester.
Hooker, E. G. Waterbury.
Hanrahan, J. D. Rutland.
Hawley, D. C. Burlington.
†House, C. P. Royalton.
Hall, E. J. Morristown.
Hawley, C. F. Fairfax.
Hazelton, D. W. Springfield.
Hazelton, W. F. Springfield.
Hyde, G. B. North Hero.
Janes, Henry Waterbury.
Jackson, J. H. Barre.
Johnson, R. T. West Concord.
†Jennings, C. G. R. Bennington.
Jenne, J. N. St. Albans.
Jacobs, C. W. Richmond.
Jackson, J. W. Barre.
Jones, S. A. Sheffield.
Keenan, J. C. Rutland.
Kemp, D. G. Montpelier.
Kidder, F. T. Woodstock.
Kincade, R. M. Highgate Centre.
Kenyon, H. B. Townshend.
Locke, C. W. Grafton.
Lane, George E. Ludlow.
Linsley, Jo H. Burlington.
Ladue, F. L. Alburgh Springs.
Lee, H. H. Wells River.
Letourneau, A. A. Burlington.
Lawton, S. E. Brattleboro.
Mack, E. B. Olcutt.
McSweeney, P. E. Burlington.
McSweeney, J. E. Barre.
Miller, A. J. Brattleboro.
Moody, A. E. Isle La Motte.
†Maynard, L. A. Burlington.
Morgan, F. C. Felchville.
Nutting, D. H. Randolph.
Newell, H. L. Proctor.
Nichols, George B. Barre.
Porter, Edwin Northfield.
Peck, C. W. Brandon.
†Phelps, O. W. Bellows Falls.
Perry, C. C. Proctor.
Pettingill, E. H. Saxtons River.
Prime, W. R. Burlington.
Prime, M. F. Barton.
Petty, C. W. Keeler's Bay, So. Hero.
Pelton, R. M. Richford.
Pratt, C. S. Brattleboro.
Pond, E. M. Rutland.
Peck, O. W. Winooski.
Reid, W. D. Barre.
Rodeman, H. L. Bridgewater.
Richmond, J. S. Windsor.
Rugg, D. F. Hartland.
Richmond, Dean Windsor.
Russell, C. J. Hinesburgh.
Rustedt, Geo. Shrewsbury.
Robertson, F. D. St. Albans.
Rood, L. D. Jericho.
Rutherford, Jacob C. Burlington.
Rutherford, Joseph C. Newport.
Ross, C. B. West Rutland.
Reilly, J. H. Rutland.
Smith, C. C. Gaysville.
Skinner, R. B. Barton.
Sperry, C. A. Quechee.
Scott, C. A. Tyson.
Stickney, O. G Georgia.
Sears, F. W. South Hero.
Styles, W. W. Essex.
Sherwood, R. St. Albans.
Swift, H. H. Pittsford.
Sherwin, O. W. Woodstock.
Stoddard, F. H. Shelburne.
Shaw, E. M. Barnet.
Strobell, C. M. Rutland.

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Shipman, E. W. Vergennes.
Senton, B. C. Rutland.
Stewart, W. E. Wallingford.
Stiles, T. R. St. Johnsbury.
Stoddard, R. O. New Haven.
Stimson, E. P. West Randolph.
Tinkham, H. C. Burlington.
Towsley, N. Panton.
Tanner, J. D. Winooski.
Trull, E. V. Manchester.
Upham, E. F. West Randolph.
Vincent, W. H. Orwell.
Varney, W. H. H. Charlotte.
Warren, M. D. Cabot.
Woodward, A. T. Brandon.
Woodward, J. H. Burlington.
Worthen, H. G. Barre.
Wiswell, S. L. Cabot.
Wilder, H. R. Swanton.
Willard, A. J. Burlington.
Wheeler, J. B. Burlington.
White, P. P. Williamsville.
Willard, G. F. B. Vergennes.
Whipple, E. O. Danby.
Woodhull, J. B. So. Shaftsbury.
Watson, E. B. Williamstown.
Weston, E. S. Newfane.

*Deceased. †Removed from State.

HONORARY MEMBERS.

		Elected.
A. E. Field	Barre, Vt	1890
C. P. Frost	Hanover, N. H	1886
H. P. Watson	Haverhill, N. H	1887
J. B. Ransom	Dannamora, N. Y	1889
O. B. Douglas	New York, N. Y	1891
Wm. F. Hutchinson	Providence, R. I	1891

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